



Republic of the Philippines
UNIVERSITY OF SOUTHERN MINDANAO
Kabacan, Cotabato



COLLEGE OF SCIENCE AND MATHEMATICS
DEPARTMENT OF MATHEMATICS AND STATISTICS

FACULTY RESEARCHES CONDUCTED

Faculty	Title	Journal/Conference/Book/Publisher	Year
1. Verzosa, Debbie Marie	A Mathematical App for the Conceptual Understanding of Area and Perimeter	International Conference on Computers in Education	2023
	Factor Influencing Filipino Children's Solutions to Addition and Subtraction Word Problems	Educational Psychology	2009
	Learning to Solve Addition and Subtraction Word Problems in English as an Imported Language	Educational Studies in Mathematics	2013
	Crystallographic Patterns in Philippine Indigenous Textiles	Applied Crystallography	2018
	Using Dynamic Tools to Develop an Understanding of the Fundamental Ideas of Calculus	International Journal of Mathematical Education in Science and Technology	2014
	Prospects and Challenges in Implementing a New Mathematics Curriculum in the Philippines	School Mathematics Curricula: Asian Perspectives and Glimpses of Reform	2019
	Young Filipino Students Making Sense of Arithmetic Word Problems in English	Journal of Science and Mathematics Education in Southeast Asia	2009
	Pre-service Elementary Teachers' Reasoning in Introducing Multidigit Substraction	International Journal of Mathematical Education in Science and Technology	2020
	Why do Disadvantaged Filipino Children Find Word Problems in English Difficult?	Mathematics Education Research Group of Australasia	2010

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App-Based Scaffolds for Writing Two-Column Proofs	International Journal of Mathematical Education in Science and Technology	2019
Digital Simulations for Grade 7 to 10 Mathematics	Philippine Journal of Science	2019
Weaving Maths	The Mathematical Intelligencer	2014
School Mathematics Curricula: Asian Perspective and Glimpses of Reform	Springer	2019
Congruence Between Context and Opportunities for Professional Development of Mathematics Teachers in the Philippines	Professional Development of Mathematics Teachers: An Asian Perspective	2017
Reading the World with Calculus	Primus	2015
Using Mobile Technology to Promote Higher-Order Thinking Skills in Elementary Mathematics		2021
Mathematics Embedded on Culture the Weaves of Batak Basketry	Philippine Studies: Historical and Ethnographic Viewpoints	2021
App for Addition and Subtraction of Integers	International Journal for Technology in Mathematics Education	2018
Children Solving Word Problems in an Imported Language: An Intervention Study		2011
Understanding and Developing Proofs with the Aid of Technology	Electronic Journal of Mathematics and Technology	2008
Practice Through Play Using Mobile Technology	International Association for Development of the Information Society	2023

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Deployment of Mathematical Resources to a Philippine High School Through a Community LTE Network		2022
Designing Mobile Apps to Promote Numeracy and Statistical Reasoning		2020
Using Word Problem Solving Prompts to Support NESB Students	Australian Primary Mathematics Classroom	2014
The Emerging Role of GeoGebra in the Philippines		2011
On Proof Techniques and Technology		2007
Designing Performance TAsks in Mathematics Using Technological Tools		2021
Development of Gamified Number Line App for Teaching Estimation and Number Sense in Grades 1 to 7		2021
Engaging Learners Through Data: Senso Eskwela Pilipinas	Proceedings of the 27 th Asian Technology Conference in Mathematics. Mathematics and Technology	2022
On Maximizing Technology Resources and Their Benefits in Teaching and Learning Mathematics		2012
Strategies in Maximizing the Use of Existing Technology in Philippine Schools		2006
Navigating Around Marginalizing Complexities: The Case of Mathematics Teachers in the Philippines	ZDM–Mathematics Education	2024
Development of an App and Videos to Support the Fraction Learning Trajectory From Grades 1–7	International Conference on Computers in Education	2

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Color Symmetry in the Hand Woven Mats of the Jama Mapun		2014
Ateneo Professors Discuss the Interplay of Math & Culture		2014
Teaching Children to Solve Mathematical Word Problems in an Imported Language	Proceedings of PME	2010
Solutions of Addition and Subtraction Word Problems by Filipino Public School Children	Intersection 11	2010
Symmetry Groups of the Batak Basket Weave Patterns	Applied Crystallography	2024
Layer Groups of Batak Weaves	arXiv	2024
Mathematical Mobile Apps Via Rural Casting	International Association for Development of the Information Society	2023
Community Math Stations as a Learning Opportunity for Preservice	PRIMUS	2020
Cryptographic Patterns in Philippines Indigenous Fabrics	L. Appl. Cryst 51, 456–469	2017
Overcoming Language Barriers in Word Problem Solving: A Framework for Intervention	Biennial Conference of the Australian Association of Mathematics Teacher	2011
Technology-Based Manipulatives	Electronic Journal of Mathematics and Technology	2007
GeoGebra Applets for Fostering Conceptual Understanding in Algebra	International Association for Development of the Information Society	2024
Challenging Deficit Perspective in Developing Countries: Teachers' Explanation of Fraction Concepts	Proceeding of the 14 th International Congress on Mathematical Education: Volume II: Invited Lectures	2024

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	Enhancing Trigonometry Learning Through a Mobile App	International Conference on Computers in Education	2023
	A Visualization App on Proving Geometric Concepts	International Conference on Computers in Education	2023
	Design of a Mobile App to Promote Understanding and Fluency in Finding the Equation of a Line	International Conference on Computers in Education	2023
	Technological Tools for the Teaching and Learning of Statistics		2023
	Bridging the Mathematics gap Through the Use of Mathematical Apps		2023
	Filipino Children's Mathematical Word Problem Solving in English as an Imported Language		2012
	The Emerging Role of GeoGebra in the Philippines	Model-Centered Learning: Pathways to Mathematical Understanding Using GeoGebra	2011
2. Pimentel, Jonald L.	Some Biases in Likert Scaling Usage and its Correction	International Journal of Science: Basic and Applied Research	2019
	A Note on the Usage of Likert Scaling for Research Data Analysis	USM R&D Journal	2010
	Modeling Nonignorable Missing data in Speed Tests	Educational and Psychological Measurement	2008
	Nonignorable data in IRT Models: Polytomous Responses and Response Propensity Models with Covariates	Psychological Test and Assessment Modeling	2015
	Overview of Priorities, threats, and Challenges to biodiversity Conservation in the Southern Philippines	Regional Sustainability	2023

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	Item Response Theory Modeling with Nonignorable Missing Data		2005
	Caught in the Crossfire: Biodiversity Conservation Paradox of Sociopolitical Conflict	NPJ Biodiversity	2024
	Modeling Nonignorable Missing Data Processes in item Calibration	Law School Admission Council	2006
	Ligawasan Marsh Wld Crocodile: Status of Crocodylus Mindorensis	The World Conservation Union	2008
	Fixed Effects IRT Model	Behaviormetrika	2006
	Local Attitudes and Sightings in Ligawasan Marsh and Its Tributaries: A Survey	National Museum Papers	2007
	Genetics or Environment: Tracing the Root Cause of Increasing Homosexual Population	Advances in Social Sciences Research Journal	2022
	Comparison of Item Difficulty Estimates in a Basic Statistics Test Using ITM and CTT Sptware Packages in R	International Journal of Advanced Computer Science and Application	2020
	K-Domination and Connected K-Domination in Graphs	Journal of Analysis and Application	2016
	The Effect of Retention Interval Over a Three Year Period on the Elementary Algebra Performance of High School Students	International Journal of Science: Basic and Applied Research	2019
	Reply to Pitogo et al.: No Single Silver Bullet to Simply Understand War-Biodiversity Conflict in the Philippines	NPJ Biodiversity	2025
	Investigating the Effects of Different Distance Learning Modalities on Student Academic Performance in technology Education Programs	Vietman Journal of Education	2024
	Fish Catch Assessment of the Nine Fish Species at Ligawasan Marsh, North	Journal of Agricultural Research, Development,	2024

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	Cotabato, Philippines	Extension and Technology	
	An Investigation on the effect of the Difficulty of an Item in a Multiple Choice Examination When Item Choices are Rearrange	Advances in Social Science Research Journal	2021
	Does Retention Interval Matters in Mathematical Performance?	International Journal Science: Basic and Applied Research	2020
	The Effect of Classical Music on Spatial Intelligence	USM R&D Journal	2012
	The Effect of Positive Reinforcement on Class Participation Among Preschoolers	USM R&D Journal	2011
	Effect of Token Economy on Students' Performance in Mathematics		2021
3. Tandog, Leorence C.	Climate-induced Stressors to Peace: A Review of Recent Literature	Environmental Research Letters	2021
	The Potential of Self-Learning Modules to Develop Mathematical Representations and Connections in Distance Learning	International Journal of Advance Research and Innovative Ideas in Education	2023
	Farming Admist Climate Change: The Contectual Vulnerabilty of Farmers in Cotabato, Philippines	Journal of Agriculture Research Development Extension and Technology	2023
	Introducing Lesson Study to Teachers in Southern Philippines: Foreseen Challenges		2014
	Curriculum and Item Matching in Relation to Filipino Students' performance in the TIMSS		1997
	The Application of Enhanced Damath in Learning Operations on Integers and Developing Strategic Thinking	Journals of Effective Teaching	2025

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4. Benjamin, Philip Lester P.	uSp-Sets and uSp-Functions	International Journal of Mathematics Analysis	2015
	Separation Axioms via generalized uDp-Open Sets	Applied Mathematical Sciences	2016
	Rw-Connectedness and rw-sets in the Product Space	Applied Mathematical Sciences	2014
	Vertex-weighted (k1,k2) E-torsion Graph of Quasi Self-dual Codes	European Journal of Pure and Applied Mathematics	2024
	umnSp-Open Sets in Bigeneralized Topological Spaces	Computer Science	2024
	Absolute uSp-Functions and uSp-Connectedness	Applied Mathematical Sciences	2015
	Some Properties of rw-Sets and rw-Continuous Functions	Applied Mathematical Sciences	2014
5. Paleta, Leonard M.	More on Perfect Roman Domination in graphs	European Journal of Pure and Applied Mathematics	2020
	On Perfect Italian Domination in Graphs	Discrete Mathematics, Algorithms and Applications	2024
	Heuristic Approach to Nursing Students' Achievement Test Scores	Psychological and Education: A Multidisciplinary Journal	2023
	Vertex-weighted (k1,k2) E-torsion Graph of Quasi Self-dual Codes	European Journal of Pure and Applied Mathematics	2024
6. Garcia, Anna Jean G.	Genetics or Environment: Tracing the Root Cause of Increasing Homosexual Population	Advances in Social Sciences Research Journal	2022
7. Pilongo, Jupiter G.	Vertex-weighted (k1,k2) E-torsion Graph of Quasi Self-dual Codes	European Journal of Pure and Applied Mathematics	2024
	Duality of Codes Over a Certain Ring of Order 2^m	The 2 nd International Conference in ICT Application Research	2024
8. Nanding, Sandra A.	Connected Co-Independent Hop Domination in the Edge Corona and Complementary	European Journal of Pure and Applied Mathematics	2024

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	Prism of Graphs		
	On Connected Co-Independent Hop Domination in Graphs	European Journal of Pure and Applied Mathematics	2021

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