

Regular
PROCEEDING
International Seminar on Innovation in Mathematics and Mathematics Education
3rd ISIMMED

*“Innovation in STEM Education: Current Research Trends and Practices in
Mathematics and Mathematics Education”*

Yogyakarta, October 3-4, 2019

Published by:
Departement of Mathematics Education
Faculty of Mathematics and Natural Science
Yogyakarta State University
Karangmalang, Sleman, Yogyakarta
Faculty of Mathematics and Natural Science
UNY, 2019
ISBN : 978-602-73403-5-0

**Regular
PROCEEDING**

International Seminar on Innovation in Mathematics and Mathematics Education
3rd ISIMMED

By :
Departement of Mathematics Education
Faculty of Mathematics and Natural Science
Yogyakarta State University

ISBN : 978-602-73403-5-0

Editors : Nur Hadi W [et.al] - Yogyakarta, Yogyakarta, Faculty of
Mathematics and Natural Science
Yogyakarta State University, 2019

Published by:
Departement of Mathematics Education
Faculty of Mathematics and Natural Science
Yogyakarta State University
Karangmalang, Sleman, Yogyakarta
Faculty of Mathematics and Natural Science
UNY, 2019

1st Issue
October 2019 Issue
Katalog of The Issue (KDT)
Reviewers : Dr. Agus Maman Abadi [et.al] - Yogyakarta, Mathematics and
Natural Science Faculty

Organized by :



Departement of Mathematics Education
Faculty of Mathematics and Natural Science
Yogyakarta State University

The proceeding can be accessed at :
<http://isimmed.uny.ac.id/proceeding-2019>

Process editing of all the articles in proceedings is conducted by
the Team Reviewer International Seminar on Innovation in Mathematics and
Mathematics Education from Departement of Mathematics Education,
Faculty of Mathematics and Natural Science, Yogyakarta State
University

Regular PROCEEDING

International Seminar on Innovation in Mathematics and Mathematics Education
3rd ISIMMED

*“Innovation in STEM Education: Current Research Trends and Practices in
Mathematics and Mathematics Education”*

Panitia pelaksana:

Steering committee

1. Rektor UNY
2. Direktur Pascasarjana UNY
3. Dekan FMIPA

Chairman

1. Prof. Dr. Heri Retnawati
2. Dr. Wahyu Setyaningrum

Secretary

1. Nila Mareta Murdiyani, M.Sc
2. Syarifah Inayati, M.Si.

Finance Committee

1. Himmawati Puji Lestari, M.Si
2. Fitriana Yuli Saptaningtyas, M.Si

Academic Committee

1. Kismiantini, PhD
2. Ilham Rizkianto, M.Sc

Reviewer

1. Prof. Marsigit, MA
2. Jailani, M.Pd
3. Sugiyono, M.Pd
4. Dr. Dhoriva Urwatul W
5. Dr. R Rosnawati
6. Dr. Heri Retnawati
7. Dr. Hartono
8. Dr. Agus Maman Abadi
9. Endah Retnowati, Ph.D
10. Kismiantini, Ph.D
11. Dr. Jailani
12. Dr. R. Rosnawati
13. Dr. Dhoriva U.W
14. Dr. Ali Mahmudi
15. Dr. Heri Retnawati
16. Wahyu Setyaningrum, Ph.D.
17. Dr. Karyati
18. Dr. Djamilah Bondan W
19. Dr. Kana Hidayati
20. Dr. Sri Andayani, M.Kom
21. Dr. Ariyadi Wijaya

Registration Committee

1. Kuswari Hernawati, M.Kom
2. Husna 'Arifah, M.Si
3. Kana Hidayati, M.Pd

	4. Dwi Lestari, M.Si
	5. Heru Sukoco, M.Pd.
	6. Lusi
Public Relations	1. Dr. Djamilah Bondan W
	2. Murdanu, M.Pd
Editor and Proceeding Committe	1. Nur Hadi Waryanto, M.Eng
	2. Nikenasih Binatari, M.Si
	3. Eminugroho Ratnasari, M.Si
	4. Retno Subekti, M.Sc.
	5. Emut, M.Si
	6. Anggit
	7. Ezra
Programme Committee	1. Musthofa, M.Si
	2. Retno Subekti, M.Si
	3. Dr. Sri Andayani, M.Kom.
	4. Dr. Karyati
	5. Endah Retnowati, PhD
	6. Endang Listyani, MS
	7. Mathilda Susanti, M.Si
	8. Elly Arliani, M.Si
	9. Tuharto, M.Si
	10. Bambang Sumarno, HM
	11. Caturiyati, M.Si
	12. Atmini Dhoruri, MS
	13. Kus Prihantoso, M.Si
	14. Muhammad Fauzan, M.Sc.St

Published by :

Jurusan Pendidikan Matematika FMIPA UNY

Jl. Colombo No.1, Karang Malang, Caturtunggal, Kec. Depok, Kabupaten Sleman, Daerah Istimewa Yogyakarta 55281

Welcome from the Chair of 3rd ISIMMED

On behalf of the committee, I am pleased to welcome you to the 3rd *International Seminar on Innovation in Mathematics and Mathematics Education (The 3rd ISIM-MED 2019)* held in Universitas Negeri Yogyakarta, Indonesia. In accordance with the development of science and technology, the practice of research activities and learning activities needs to be adjusted. This adjustment needs to be linked to Science, Technology, Engineering and Mathematics (STEM). As we know that the course on STEM is inseparable from mathematical content such as algebra, geometry, analysis, applied mathematics, statistics, and computing, and also teaching and learning. With the theme of “*Innovation in STEM Education: Current Research Trends and Practices*”, this seminar discusses the growth of technology that gave many impacts in all part of life, particularly in mathematics and mathematics education. We hope that this event will generate innovative concept and practices in mathematics and mathematics education, and as an attempt to build competitive human resource and a forum for researchers, educators, practitioners and policy makers to share their experiences.

In this seminar, there are three keynote speakers will discuss about Computers, Software, Mathematics, Teaching and relation among them; Integrating technology into learning mathematics; and the role of mathematics teacher in the digital area. There are 144 participants who will be present their articles in many topics such as Research in STEM Education, Teaching and Instruction in STEM Education, Assessment in STEM Education, Etnomathematics, Statistics and its applications, Algebra and its applications, Geometry and its applications, Analyze and its applications, Computer science and its application.

I would like to take this opportunity to express my gratitude and appreciation to Prof. Dr. José Antonio Vallejo (Universidad Autónoma de San Luis Potosí Mexico), Prof. Dr. Barry Kissane (School of Education, Murdoch University Australia), Dr. Ariyadi Wijaya (Universitas Negeri Yogyakarta Indonesia), all presenters, participants, session chairs, reviewers, and committee for their contributions to this seminar. We also would like to address our gratitude to Universitas Negeri Yogyakarta and Casio Education Singapore Pte. Ltd., for the generous supports and sponshorships in this seminar. Your active assistance and participations, as already demonstrated, and present great contribution for the success of this seminar. We are grateful for this, a very warm welcome to you, and we wish you have a great time during this event. We believe that there would be any shortcomings and inconveniences in this conference, therefore, we do apalogize for these.

Yogyakarta, October 2019

Prof. Dr. Heri Retnawati

Contents

No	Name	Title	Page
1	Amelia, Nurviana, Fitra Muliani, Bulan Nuri	Forecasting Annual Coffee And Rubber Production In Aceh Using Exponential Smoothing	1
2	Arief Budi Wicaksono; Aprilia Nurul Chasanah; Yesi Franita	Cognitive Growth Model To Improve Students' Mathematical Problem Solving And Activities In Differential Calculus Course	9
3	Oby Andriawan; Sri Hastuti Noer	The Analysis Of Mathematics Reflective Thinking Skills Of High School Students In Completing Trigonometry Problems	15
4	Masyurah Muzaimah; Sri Hastuti Noer	Analysis Of Reflective Thinking Skill In Solving Mathematical Story Problems On Quadrilateral Material	21
5	Maiya Haejeli, Sri Hastuti Noer	Reflective Thinking Process Of Junior High School Students In Solving The Mathematics Problem Of Triangle And Rectangular Materials Based On The Local Load.	27
6	Ulfiani Rahman; Fitriani Nur; Nursalam; Wahida Sariana; Thamrin Tayeb; Munawarah ; Andi Kusumayanti; Lisnasari Andi Mattoliang; Andi Dian Angriani; A.Sriyanti	The Comparison Of TADIR Learning (Translation, Analysis, Design, Implementation, Review) With Integrated Islam And PBL (Problem Based Learning) Against Students' Mathematical Problem Solving	33
7	E Nur'aeni L; I F Apriani; N R Restiani	Creating Fractals In Language Programming LOGO Through Exploration Of Mathematical Recursions Using The Scientific Calculator Casio FX 991EX Classwiz In High School	41
8	Nur Yuliany; Asri Juli Yana; Fitriani Nur; Megita Dwi Pamungkas; Ainul Uyuni Taufiq; Baharuddin; Jasmawati; Andi Ika Prasasti Abrar; Hafsyah; Nidya Nina Ichiana	The Comparison Of Mathematical Concept Understanding Ability By Using Team Games Tournament (TGT) And Think Pair Share (TPS) Learning Models	47