PROCEEDING

ICMETA

International Conference on Mathematics : Education, Theory, and Application

Mathematics in the Science and Art

Number: 1|27th June 2017 ISBN: 978-602-397-058-2

Reviewers:

Prof. Dr. Budiyono, M.Sc.
Prof. Drs. Tri Atmojo Kusmayadi, M.Sc., Ph.D.
Dr. Sutanto, DEA
Drs. Isnandar Slamet, M.Sc., Ph.D.
Dr. Diari Indriati, M.Si.
Dr. Hasih Pratiwi, M.Si.
Dr. Dewi Retno Sari Saputro, M.Kom
Wakhid, MT.

Editors:

Dra. Purnami Widyaningsih, M.App.Sc. Ririn Setyowati, M.Sc. Riris Listya Dahita Putri, S.Si. Kornelius Ronald Demu Rifqi Choiril Affan

Layout:

Nughthoh Arfawi Kurdhi, M.Sc. Vika Yugi Kurniawan, M.Sc. Putranto Hadi, M.Si.

December, 6th-7th 2016 Department of Mathematics Faculty of Mathematics and Natural Sciences Universitas Sebelas Maret

PREFACE

This proceeding contains papers collected from event of The International Conference on Mathematics: Education, Theory, and Application (ICMETA). Some papers presented in ICMETA were published in Journal of Physics: Proceeding Series and others were published in this proceeding.

The ICMETA is conference that was first accomplished by Department of Mathematics, Universitas Sebelas Maret and is planned to be held biennially. This conference is an organization of scientific meetings among mathematicians, students, teachers, researchers, and practitioners from various colleges and related institutions. The goals of the conference are

- (a) to increase the role of mathematics, statistics, mathematics education, and computer science in an effort to overcome various problems;
- (b) to disseminate, discuss, and communicate the results of research in the fields of mathematics, statistics, mathematics education and computer sciences;
- (c) to facilitate communication and discussion related to the problems and current issues of education, sciences, and technology.

As a scientific meeting event we invited experts from 6 different countries including Indonesia, Australia, the Netherlands, Malaysia, Japan, and France as keynote speakers. They were

- 1. Prof. Dr. Edy Tri Baskoro, M.Sc. (Department of Mathematics, Faculty of Mathematics and Natural Sciences, Bandung Institute of Technology, Indonesia),
- 2. Dr. Darfiana Nur, M.Sc. (Statistical Science in the School of Computer Science, Engineering and Mathematics, Flinders University, Australia),
- 3. Dr. G.R. (Ruud) Pellikaan (Department of Mathematics and Computer Science, Technische Universiteit Eindhoven, Netherlands),
- 4. Prof. Dr. Mohd Bin Omar (Institute of Mathematical Sciences, Faculty of Science, University of Malaya, Malaysia),
- 5. Prof. Dr. Kenjiro T. Miura (Realistic Modeling Laboratory, Department of Mechanical Engineering, Shizuoka University, Japan),
- 6. Dr. Sutanto, DEA (Department of Mathematics, Faculty of Mathematics and Natural Sciences, March Eleven University, Indonesia),
- 7. Dr. Hanna Arini Parhusip (Department of Mathematics, Faculty of Science and Mathematics, SWCU, Salatiga Indonesia), and
- 8. Dr. Benoît Liquet (Laboratory of Mathematics and Their Applications, Université de Pau et des Pays de l'Adou, France).

Call for Papers for this conference has been notified to several academic and professional associations (IndoMS) since April until October 2016 to be able to muster 53 colleges and polytechnics as well as related agencies including the National Institute of Aeronautics and Space (LAPAN). Attending

participants and keynote speakers were from Australia, Europe and Asia. Additionally, Indonesian participants were from various provinces such as: DKI Jakarta, West Java, Yogyakarta, Central Java, East Java, Bali, Southeast Sulawesi, West Sumatra, Riau Islands, and South Sulawesi. During the two days conference, the researchers presented the most lectured discoveries in Mathematics and Statistics as well as established network for possible joint researches and collaborations among the participants. The conference is consisting parallel sessions and plenary sessions from invited speakers with various interesting topics which held in two days.

We are grateful to all the members of the program committee who contributed for the success in framing the program. We also thank all the delegates who contributed to the success of this conference by accepting our invitation and submitting articles for presentation in the scientific program. We wish for all of us a grand success in our scientific life and we do hope that the coming conferences will pick up similar success, and even better.

Finally, we wish that proceeding will be useful for readers and researchers who want to look for materials in order to support their study.

Chair of ICMETA 2016

Dr. Dewi Retno Sari Saputro, M.Kom
E-mail : dewiretnoss@staff.uns.ac.id
Department of Mathematics, Faculty of Mathematics and Natural Sciences
Universitas Sebelas Maret

TABLE OF CONTENTS

Title	i
Preface	ii
Table of Contents	iv
The Development of Social Arithmetical Teaching Equipment with Problem Based Learning Model	
(Tri Andari and Restu Lusiana)	1
Development of Teaching Materials Based Digital Storytelling on Strategy Learning Mathematics Course (Dwijayanti and Rasiman)	13
The Use of Core Model in Enhancing The Mathematical Reasoning Ability of	
Junior High School (Dahlia Fisher and Poppy Yaniawati)	22
Fuzzy Logic for Grasping Type Classification of Human Hand Based on Myoelectric Signal Parameter (Hartono, Priadythama, and Rochman)	33
Gas Measurement System (Haryono and Dian Yudha R)	42
Technical Implementation of Gas Measurement System (Haryono)	51
The Context of Students Following The Introduction Probability Theory Course in The Reflective Pedagogy Perspective	60
(Hongki Julie)	υU
Student Misconceptions in Solving Real Analysis Problem Based on Reasoning Framework	
(Rita Pramujiyanti Khotimah)	70

Mathematics' Teacher Conception in Suporting the Integration Mathematics' Literacy and Mathematics Teaching and Learning (N D S Lestari, D Juniati, and St Suwarsono)	of 76
The Development of Introduction for Basic Mathematics Based Structured Tasks Textbook to Improve the Ability of Logical Thinking (Restu Lusiana and Tri Andari)	84
On Gamma Labeling of Double Cones Graph (Titin Sri Martini and Mania Roswitha)	95
Upgrading Statistical Reasoning Ability Junior High School Students Through Contextual Teaching and Learning (Iyam Maryati)	101
Beliefs in Problem Solving: Case Study in Circles Tangents Line Materials (Muhtarom, Dwi Juniati, and Tatag Yuli Eko Siswono)	108
Test of Difference Between Paired Sample by Using Mcnemar Test (Tantri Nawangsari)	117
Diagnosis of The Diabetes Mellitus Disease with Fuzzy Inference System Mamdani (Za'imaitun Niswati, Aulia Paramita, and Fanisya Alva Mustika)	126
Learning Mathematics with Traditional Game "Jirak": Impact on Mathematics Disposition and Students' Achievement (Nizaruddin, Muhtarom, and Sugiyanti)	134
Mathematics learning activities of the acceleration class program of SMA Negeri 2 Purwokerto (Paskalia Pradanti and St Suwarsono)	141
On The Strong Metric Dimension of Lollipop Graph and Generalized Web Graph (Tiffani Arzaqi Putri and Tri Atmojo Kusmayadi)	146
The Use of Modules and Game "Code" On The Padlock as a Media to Improve Motivation of XI Accounting Class in the Material of Combinatorial Analysis in SM Putra Tama Bantul	ΙK
(Anindiati Praminto Putri)	151
Effect of Students Creativity in Wolfram Mathematica Assisted on Learning Achievement in Linear Algebra Course (Noviana D R, Aryo A N, Lukman H, Tri Atmojo K, and Budi U)	157
Seventh Grade Students' Performance in Dealing with Multiplication of Fractions	101

(Veronika Fitri Rianasari and Hongki Julie)	165
Multivariate Adaptive Regression Spline (MARS) Model on Dengue Hemorrhagic Fever (DHF) Sufferers in Semarang	
(Dewi Retno Sari S, D H Puspitaningrum, N A Kurdhi, and Respatiwulan)	170
Students Learning Activities in Mathematics Learning Using Scientific Approach Sl Negeri 10 in Class XI MIA 4 Of Yogyakarta	MA
(Maria Rettian A S and St Suwarsono)	179
Breast Cancer Detection Using Data Mining Classification Methods (Ni Wayan P S, Rayung Wulan, and Mei Lestari)	185
An Empirical Analysis of Portfolio Performance Using Maximin and Fuzzy Linear Programming	
(Retno Subekti and Rosita Kusumawati)	192
Geometry High School Students Thinking Ability Based on Level Van Hiele (Abi Suwito, Ipung Yuwono, I Nengah Patra, and Santi Irawan)	200
The Evaluation of E-Learning Maturity at Senior High Schools in Yogyakarta (Nur Hadi Waryanto, Nur Insani, and Retno Subekti)	208
Learning Analysis Based on Humanism Theory and Mathematics Creative	
Thinking Ability of Student	
(Hevy Risqi Maharani and Sukestiyarno)	. 218