Mathematics, Informatics, Science and Education International Conference (MISEIC 2017)

Journal of Physics: Conference Series Volume 947

Surabaya, Indonesia 9 September 2017

Editors:

Yuni Sri Rahayu Rooselyna Ekawati Asep Bayu Dani Nandiyanto Agung Lukito Setya Chendra Wibawa

ISBN: 978-1-5108-5565-6 ISSN: 1742-6588 Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by the Institute of Physics All rights reserved. The material featured in this book is subject to IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics Dirac House, Temple Back Bristol BS1 6BE UK

Phone: 44 1 17 929 7481 Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400 Fax: 845-758-2633 Email: curran@proceedings.com Web: www.proceedings.com

Table of contents

Volume 947

Mathematics, Informatics, Science and Education International Conference (MISEIC)

9 September 2017, Surabaya, Indonesia

Accepted papers received: 18 December 2017 Published online: 10 January 2018

Preface

Mathematics, Informatics, Science and Education International Conference (MISEIC)

Peer review statement

Papers

The Effect of Sodium Hydroxide Molarity on Strength Development of Non-Cement Class C Fly Ash Geopolymer Mortar

A Wardhono.....1

Kinetic Parameters of Thermal Decomposition Process Analyzed using a Mathematical Model

A B D Nandiyanto, R Ekawati and S C Wibawa.....7

The Classification of Diabetes Mellitus Using Kernel k-means

M Alamsyah, Z Nafisah, E Prayitno, A M Afida and E M Imah.....12

Iris Recognition Using Feature Extraction of Box Counting Fractal Dimension

C Khotimah and D Juniati.....17

Gaussian Process Regression Model in Spatial Logistic Regression

A Sofro and A Oktaviarina.....23

Some Basic Properties of Uniformly Symmetrically Continuous (Real Valued) Functions on Metric Spaces

Manuharawati, D N Yunianti and M Jakfar.....29

<u>Student's Critical Thinking in Solving Open-Ended Problems Based on Their Personality</u> <u>Type</u>

L D Fitriana, Y Fuad and R Ekawati.....33

Designing Tasks to Examine Mathematical Knowledge for Teaching Statistics for <u>Primary Teachers</u>

T Y E Siswono, A W Kohar and S Hartono.....40

The improvement of autism spectrum disorders on children communication ability with PECS method Multimedia Augmented Reality-Based

Taryadi and I Kurniawan.....46

The Role of Self-Assessment in Foundation of Mathematics Learning

Masriyah.....53

Multiple Sensing Application on Wireless Sensor Network Simulation using NS3

I F Kurniawan and R Bisma.....59

Students' Creativity: Problem Posing in Structured Situation

I K Amalina, M Amirudin and M T Budiarto.....64

<u>Critical-Inquiry-Based-Learning: Model of Learning to Promote Critical Thinking Ability</u> of Pre-service Teachers

S Prayogi, L Yuanita and Wasis.....71

Students' Spatial Performance: Cognitive Style and Sex Differences

U Hanifah, D Juniati and T Y E Siswono.....77

Designing PISA-Like Mathematics Tasks In Indonesia: Experiences and Challenges

Z Zulkardi and A W Kohar.....84

High-Impact Aerobic and Zumba Fitness on Increasing VO₂MAX, Heart Rate Recovery and Skinfold Thickness

T J Suminar, N W Kusnanik and O Wiriawan.....91

Students' Covariational Reasoning in Solving Integrals' Problems

N V Harini, Y Fuad and R Ekawati.....96

Students' Misconceptions on Properties of Rectangles

R W Ningrum, M Yulianti, D D Z Helingo and M T Budiarto.....102

Mathematics Literacy of Secondary Students in Solving Simultanenous Linear Equations

R S I Sitompul, I K Budayasa and Masriyah.....108

Teacher's Mathematical Communication Profile in Facilitating and Guiding Discussion

R Umami, I K Budayasa and St Suwarsono.....115

Improving Science Process Skills for Primary School Students Through 5E Instructional Model-Based Learning

N L Choirunnisa, P Prabowo and S Suryanti.....122

<u>Refractive Thinking Profile In Solving Mathematical Problem Reviewed from Students</u> <u>Math Capability</u>

M Maslukha, A Lukito and R Ekawati.....127

The Creativity of Reflective and Impulsive Selected Students in Solving Geometric <u>Problems</u>

R N Shoimah, A Lukito and T Y E Siswono.....133

The Physiological Profile of Junior Soccer Players at SSBB Surabaya Bhakti

M Nashirudin and N W Kusnanik.....139

Flexibility in Mathematics Problem Solving Based on Adversity Quotient

N A Dina, S M Amin and Masriyah.....144

<u>Process Skill Assessment Instrument: Innovation to measure student's learning result</u> <u>holistically</u>

K N Azizah, M Ibrahim and W Widodo.....149

Laboratory Activity Worksheet to Train High Order Thinking Skill of Student on Surface Chemistry Lecture

B Yonata and H Nasrudin.....154

Student Teachers' Proof Schemes on Proof Tasks Involving Inequality: Deductive or Inductive?

A H Rosyidi and A W Kohar.....161

The Implementation of Cumulative Learning Theory in Calculating Triangular Prism and Tube Volumes

M Muklis, C Abidin, M D Pamungkas and Masriyah.....170

Students' Relational Thinking of Impulsive and Reflective in Solving Mathematical <u>Problem</u>

M A Satriawan, M T Budiarto and T Y E Siswono.....176

Creativity of Field-dependent and Field-independent Students in Posing Mathematical Problems

N Azlina, S M Amin and A Lukito.....182

The Use of Open-Ended Questions with Giving Feedback (OEQGF) for Effective Mathematic Learning

I Sabilah and J T Manoy.....188

The Effectiveness of Guided Inquiry Learning for Comparison Topics

Asnidar, S Khabibah and R Sulaiman.....195

The Development of Inquiry Learning Materials to Complete Content Life System Organization in Junior High School Students

F Mayasari, Raharjo and Z A I Supardi.....201

Slow Learner Errors Analysis in Solving Fractions Problems in Inclusive Junior High School Class

N Novitasari, A Lukito and R Ekawati.....205

Statistical Literacy: High School Students in Reading, Interpreting and Presenting Data

M Hafiyusholeh, K Budayasa and T Y E Siswono.....211

Problem Solving-based Learning Materials on Fraction for Training Creativity of Elementary School Students

Y N Widhitama, A Lukito and S Khabibah.....217

Representation of Students in Solving Simultaneous Linear Equation Problems Based on Multiple Intelligence

Y R Yanti, S M Amin and R Sulaiman.....222

<u>Students' Relational Understanding in Quadrilateral Problem Solving Based on Adversity</u> <u>Quotient</u>

A N Safitri, D Juniati and Masriyah.....228

The Effect of Acceleration Sprint and Zig-zag Drill Combination to Increase Students' Speed and Agility

O Bana, E Mintarto and N W Kusnanik.....234

Junior high school students' reflective thinking on fraction problem solving: In case of gender differences

M A Rasyid, M T Budiarto and A Lukito.....239

The Ability of Students' Mathematical Proof in Determining the Validity of Argument Reviewed from Gender Differences

Feriyanto.....245

Effect of Exercise Program Speed, Agility, and Quickness (SAQ) in Improving Speed, Agility, and Acceleration

K Azmi and N W Kusnanik.....251

Students' Algebraic Reasonsing In Solving Mathematical Problems With Adversity Quotient

F Aryani, S M Amin and R Sulaiman.....256

Effects of High Intensity Interval Training on Increasing Explosive Power, Speed, and Agility

F Fajrin, N W Kusnanik and Wijono.....261

<u>Guided Inquiry with Cognitive Conflict Strategy: Drilling Indonesian High School</u> <u>Students' Creative Thinking Skills</u>

A F Syadzili, Soetjipto and Tukiran.....266

The Development of Student's Activity Sheets (SAS) Based on Multiple Intelligences and Problem-Solving Skills Using Simple Science Tools

D S Wardani, T Kirana and M Ibrahim.....272

Functional Thinking Profile of Junior High School Student in Solving Mathematical Problem Observed by Differences of Sex

A P Siregar, D Juniati and R Sulaiman.....278

The Effectiveness of Guided Inquiry-based Learning Material on Students' Science Literacy Skills

E V Aulia, S Poedjiastoeti and R Agustini.....284

The Elementary School Students' Mathematical Problem Solving Based on Reading Abilities

R D Wulandari, A Lukito and S Khabibah.....291

Algebraic Thinking in Solving Linier Program at High School Level: Female Student's Field Independent Cognitive Style

N Hardiani, I K Budayasa and D Juniati.....298

Effectiveness of Cooperative Learning Instructional Tools With Predict-Observe-Explain Strategy on the Topic of Cuboid and Cube Volume

Nurhuda, A Lukito and Masriyah.....304

Error Analysis of Indonesian Junior High School Student in Solving Space and Shape Content PISA Problem Using Newman Procedure

U Sumule, S M Amin and Y Fuad.....309

Developing Media Module Proposed to Editor in Editorial Division

A Kristanto, Mustaji, A Mariono, Sulistiowati and D W Nuryati.....315

The blind student's interpretation of two-dimensional shapes in geometry

Andriyani, I K Budayasa and D Juniati.....321

The Clinical Test of Nano gold Cosmetic for Recovering Skin Damage Due to Chemicals: Special Case

T Taufikurohmah, A P Wardana, S Tjahjani, I G M Sanjaya, A Baktir and A Syahrani.....327

<u>Profile of Metacognition of Mathematics Pre-Service Teachers in Understanding the</u> <u>Concept of Integral Calculus with Regard Gender Differences</u>

L Misu, I K Budayasa and A Lukito.....332

Understanding fraction concepts of Indonesian junior high school students: A case of field independent and field dependent students

K Mamonto, D Juniati and T Y E Siswono.....339

Students' Representation in Mathematical Word Problem-Solving: Exploring Students' Self-efficacy

A Sahendra, M T Budiarto and Y Fuad.....346

Students' Self-Monitoring on Mathematics Ability: Cube and Cuboid Problem Solving

N T Lusiana, A Lukito and S Khabibah.....351

Algebraic Reasoning in Solving Mathematical Problem Based on Learning Style

N F Indraswari, I K Budayasa and R Ekawati.....356

Development of Problem-Based Learning Oriented Teaching Learning Materials to Facilitate Students' Mastery of Concept and Critical Thinking Skill

M Reza, M Ibrahim and Y S Rahayu.....361

Training of Students' Critical Thinking Skills through the implementation of a Modified Free Inquiry Model

S A Hadi, E Susantini and R Agustini.....367

The Profile of Student Misconceptions on The Human and Plant Transport Systems

M Ainiyah, M Ibrahim and M T Hidayat.....373

Spatial Skill Profile of Mathematics Pre-Service Teachers

R O E Putri.....379

A Metacognitive Profile of Vocational High School Student's Field Independent in Mathematical Problem Solving

L Nugraheni, I K Budayasa and S T Suwarsono.....384

Developing Learning Model P3E to Improve Students' Critical Thinking Skills of Islamic Senior High School

Bahtiar, Y S Rahayu and Wasis.....390

Students' Thinking Processes on Quadrilateral Concept: A Case of Providing Non-Examples

E B Rahaju.....396

<u>Technological Pedagogical Content Knowledge of Prospective Mathematics Teacher in</u> <u>Three Dimensional Material Based on Sex Differences</u>

M A Aqib, M T Budiarto and P Wijayanti.....403

The written mathematical communication profile of prospective math teacher in mathematical proving

K V Pantaleon, D Juniati, A Lukito and K Mandur.....408

Drilling Students' Communication Skill through Science, Environment, Technology, and Society (SETS)-Based Learning

B L Al-Farisi, Tjandrakirana and R Agustini.....414

Students' metacognitive activities in solving the combinatorics problem: the experience of students with holist-serialist cognitive style

B N Trisna, I K Budayasa and T Y E Siswono.....419

<u>Critical Thinking Skills of an Eighth Grade Male Student with High Mathematical</u> <u>Ability in Solving Problem</u>

Ismail.....426

Quadcopter Path Following Control Design Using Output Feedback with Command Generator Tracker LOS Based At Square Path

A T Nugraha and T Agustinah.....432

Introducing Nine-Point Circle to Junior High School Students

S Fiangga, M A N Azizah, R N K Rini and A N Hidayanti.....439