

State University of Makassar

**INTERNATIONAL CONFERENCE ON MATHEMATICS,  
SCIENCE, TECHNOLOGY, EDUCATION  
AND THEIR APPLICATIONS**

*"Recent Research and Issues on  
Mathematics, Science, Technology, Education  
and their Applications"*

**PROCEEDINGS  
ICMSTEA 2014**

Makassar, August 20-21, 2014

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## Conference Proceeding

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**Faculty of Mathematics and Science  
State University of Makassar**



ICMSTEA 2014: RECENT RESEARCH AND ISSUES ON MATHEMATICS,  
SCIENCE, TECHNOLOGY, EDUCATION AND THEIR APPLICATIONS

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## Forewords from the Head of Committee

Assalamu'alaikum Warahmatullahi Wabarakatuh.

Good morning and may God's blessings be upon us all.

Your Excellency the Rector of State University of Makassar (UNM) Prof. Dr. H. Arismunandar, M.Pd. Ladies and gentlemen, on behalf of the conference committee, first, I would like to give our welcome to all the delegates, keynote speakers, invited speakers, parallel speakers and participants coming today. Welcome to the conference, welcome to State University of Makassar, and welcome to Makassar.

This conference entitled "*International Conference on Recent Research and Issues in Mathematics, Sciences, Technology, Education and Their Applications (ICMSTEA) 2014*". It is assigned to celebrate the 53<sup>rd</sup> commemoration of State University of Makassar. The conference is organized by the Faculty of Mathematics and Science in conjunction with several committee members from other faculties within State University of Makassar.

Ladies and gentlemen, the conference proudly invites eleven keynote speakers coming from several countries. Therefore, I would like to express my sincere thanks to the keynote speakers, including:

1. Professor Max Warshauer (Texas State University, USA)
2. Professor Naoki Sato (Kyoto University, Japan)
3. Professor Peter Hubber (Deakin University, Australia)
4. Professor Susie Groves (Deakin University, Australia)
5. Dr. Frans Van Galen (Utrecht University, Netherlands)
6. Professor Duangjai Nacapricha (Mahidol University, Thailand)
7. Professor Baharuddin bin Aris (Universiti Teknologi Malaysia, Malaysia)
8. Professor Suratman Woro Suprodjo (Gadjah Mada University, Indonesia)
9. Professor Ismail bin Kailani (Universiti Teknologi Malaysia, Malaysia)
10. Professor Muhammad Arif Tiro (State University of Makassar)
11. Dr. Siti Nuramaliati Priyono (the Indonesian Institute of Sciences)

I would like also to give sincere thanks and gratitude to the invited speakers, including:

1. Prof. Dr. H. Arismunandar, M.Pd. (State University of Makassar)
2. Prof. Kristian H. Sugiyarto, Ph.D (State University of Yogyakarta)
3. Prof. Dr. Sutarto Hadi (Lambung Mangkurat University)
4. Dr. Nurdin Noni, M.Hum (State University of Makassar)
5. Dr. Yuni Sri Rahayu, M.Si. (State University of Surabaya)
6. Dr. Ayuddin M.T. (State University of Gorontalo)
7. Dr. Usman Pagalay (State Islamic University of Malang)
8. Dr. Suyanta, M.Si. (State University of Yogyakarta)
9. Dr. Elisa Sesa, M.Sc. (Tadulako University, Palu)

Next, I want to thank and welcome to 149 parallel speakers and totally, 450 participants approximately are registered to participate from many universities in Indonesia from Aceh to Papua, and other countries. All of them have shared their research and theoretical papers presented and discussed in the conference.



In this occasion, I would like to thanks Deputy of Governor of South Sulawesi Province (Ir. H. Agus Arifin Nu'mang, M.Si), Mayor of Makassar City (Ir. H. Ramdhan Dhany Pomanto), Rector of UNM (Prof. Dr. H. Arismunandar, M.Pd.), and Director of Post Graduate Program of UNM (Prof. H. Jasruddin Daud Malago), who are very kind to be the host of welcoming dinner and lunch during the conference.

I want to thanks also to Kalla Group, KIA Kalla, Erlangga Press, Opti Lab, and e-Bimbel Yogyakarta for their contribution as the sponsors of this conference.

Finally, it is my privilege to thanks all organizing committee members who have been showing good work and determination for the accomplishment of this conference. I would like to apologize to all of you when there are some inconvenience things during the implementation of this conference.

Thank you and wish you have a meaningful conference.

Assalamu'alaikumWarahmatullahiWabarakatuh.

Head of Committee,

SuwardiAnnas, Ph.D.



**Forewords from the Dean of Faculty of Mathematics and Science,  
State University of Makassar**

Bismillahirrahmanirrahim  
Assalamu'alaikum Warahmatullahi Wabarakatuh

First of all, let us praise to the Almighty, Allah SWT, because of his Blessings and Helps, we are able to gather here to attend the International Conference on Recent Research and Issues in Mathematics, Sciences, Technology, Education and Their Applications (ICMSTEA) 2014.

The development of education and technology in recent decades grows very rapidly. In addition, they have been specialized into many specific topics. Indeed, for researchers and lecturers, being qualified of a specific field as well as being aware of the contemporary development of other fields are two crucial things. One of the reasons why we undertake the conference is to fulfill those two things. By attending the conference, researchers and lecturers have a good opportunity to share their research findings and to obtain broader descriptions of the development of other general knowledge.

We convey our deep appreciation and gratitude to all of the committees that work from the beginning to support and organize the conference. We also strongly expect the participants of the conference to be continually productive, increase the capacity in conducting a research, and carry out both national and international scientific publications.

Finally, let me again recite thank you to the all participants of the conference who are receptive to spend their time to be present and entirely involved at this events. I wish the conference advantageous for all of us.

Billahitaufiqwalhidayah,

Wassalamu'alaikum Warahmatullahi Wabarakatuh.

Dean of Faculty of Mathematics and Science  
State University of Makassar

Prof. Dr. H. HamzahUpu, M.Ed.



## Forewords from Rector of UNM

Bismillahirrahmanirrahim  
Assalamu'alaikumWarahmatullahiWabarakatuh

Your respectable, the high officials of State University of Makassar, the committee, the speakers, and the participants of conference.

It gives me a great pleasure to extend to you all a very warm welcome, especially to our keynote speakers who have accepted our invitation to attend the conference.

It is an opportune time to convey to you that UNM is celebrating the 53rd Dies Natalis and it commends the faculty of Mathematics and Science (FMIPA) to be in charge of all activity sequences in the Dies Natalis. However, the support of other faculties is also really influential and gives valuable contribution to the success of the event.

In that celebration, we undertake several agendas including educational and sport activities. The conference, ICMSTEA, is one of our educational activities that covers a wide range of very interesting items relating to mathematics, sciences, education, technology and their applications.

By taking participation of this seminar, it is highly expected to all of us to share our research findings to society and continuously develop new ideas and knowledge. Those things are two significant steps in improving the quality of nations around the world, increasing our familiarity to each other, and even avoiding underdevelopment.

On this good occasion, let me quote what Obama said about the education related to this conference and I wish fruitful for all of us:

*Every single one of you has something you're good at. Every single one of you has something to offer. And you have a responsibility to yourself to discover what that is. That is the opportunity an education can provide.*

Furthermore, I would like to take this opportunity to express my heartfelt gratitude to all organizing committee especially for the Faculty of Mathematics and Science that primarily hosts this conference particularly and other Dies Natalis events generally.

Finally, this is a great time for me to declare the official opening of the International Conference on Recent Research and Issues in Mathematics, Sciences, Technology, Education and Their Applications (ICMSTEA) 2014.

I wish you a very enjoyable stay in Makassar, I warmly welcome you again, as in Makassar, we say "salamakkibatturimangkasara".

Wassalamu'alaikumwarahmatullahiwabarakatuh.

Rector of State University of Makassar

Prof. Dr. H. Arismunandar, M.Pd.



## TABLE OF CONTENTS

WELCOME SPEECH.....	i
TABLE OF CONTENTS .....	iv
Designing and Design Research .....	1
<i>Frans van Galen, Utrecht University</i>	
Mathworks, Math Problems and Math Education Research .....	2
<i>Max, Texas State University</i>	
Job Orientation of Undergraduate Statistics Students of FMIPA Universitas Negeri Makassar.....	3
<i>Muhammad Arif Tiro, State University of Makassar</i>	
Membraneless Vaporization Devices: Effective On-Line Tools For Separation of Volatile Compounds In Flow-Based Analysis .....	4
<i>Nacapricha, D, Uraisin, K, Choengchan, N, Ratanawimarnwong, N. and Wilairat, P, Mahidol University</i>	
Correlation Between Structures And Electronic Properties Of Organic Semiconductor Thin Films.....	5
<i>Naoki Sato, Kyoto University</i>	
Stem and Oer To Stimulate Student Engagement .....	6
<i>Baharuddin Aris, Universiti Teknologi Malaysia</i>	
Representation Construction: A Research Developed Inquiry Pedagogy For Science Education.....	7
<i>Peter Hubber, Deakin University</i>	
Improving Mathematics Teaching Through Lesson Study .....	8
<i>Susie Groves, Deakin University</i>	
Introduction To Modelling For Geographical Resources Management .....	9
<i>Suratman, Gajah Mada University</i>	
Role of Biological Sciences In Developing The Scientific Basis For Sustainable Development.....	10
<i>Siti Nuramaliati Prijono, The Indonesian Institute of Sciences (LIPI)</i>	
Mathematics Leadership.....	11
<i>Ismail Kailani, Universiti Teknologi Malaysia</i>	
Developing of School-Based Management Training Model For Principals.....	12
<i>Arismunandar, Nurhikmah H., WidyaKarmilasari Ahmad, State University of Makassar</i>	





Analysis of Complex Building Structures Through Cooperative Learning: An Approach Tounderstandcomplexsubjects.....	18
<i>Ayuddin, Gorontalo State University</i>	
Learning Number Pattern Using The Arrangement of Planting Palm Tree .....	25
<i>SutartoHadi, Agni Danaryanti, Kamaliyah, Lambung Mangkurat University</i>	
Analysis of Dynamic Behavior CD4 <sup>+</sup> T Cellsand CD8 <sup>+</sup> T Cellstomycobacterium Tuberculosis Infections .....	33
<i>Usman Pagalay, Alfi Nur Rochmatin, Islamic State University of Malang</i>	
Review On Misconception In Chemistry Textbooks, Teachers And Students Of Senior High School As Users; Case Study On The Concepts Of Quantum Numbers And Electronic Configurations. ....	40
<i>Kristian H. Sugiyarto, Yogyakarta State University</i>	
Separation of Ca (Ii) And Mg (Ii) Metal Ion Underground River Water In Baron With Activated and Inactivated Zeolite By Fixed Bed Column Adsorption Method .....	51
<i>Suyanta, Susila K, Annisa F, Hendarti and Rr. Putri F, Yogyakarta State University</i>	
Developing Equivalent Electrical Circuit Model For Organic Photovoltaic Cells.....	57
<i>Elisa Sesa, Darmawati Darwis, M. Syahrul Ulum, Abdullah, Warwick Belcher, Paul Dastoor, Tadulako University and New Castle University</i>	
Isolation And Identification OfHydrocarbon Degradation Bacteria And Phosphate Soluble Bacteria In Lapindo Mud Sidoarjo – East Java .....	70
<i>Yuni Sri Rahayu, Yuliani, Guntur Trimulyo, Surabaya State University</i>	
The Construction Process of Students' Mathematics Knowledge Based On Cognitive Style In A Learning.....	80
<i>Abdul Rahman, Ansari Saleh Ahmar, State University of Makassar</i>	
Influence of Self-Concept And Learning Interest On Mathematic Achievements of 8 <sup>th</sup> Grade Students Through Activities and Creative Thinking Ability At Junior High School In Alla Subdistrict at Enrekang District.....	91
<i>Djadir, State University of Makassar</i>	
What Is The Ability of Geosense? .....	99
<i>Feny Rita Fiantika, Surabaya State University</i>	
Mathematics Learning Based Mathematical Communication Cultured and Character of Indonesia .....	103
<i>Izwita Dewi, Tiur Malasari Siregar, Nurhasanah Siregar, MedanState University</i>	
Hipnoteaching As A Teaching Model.....	109
<i>Ja'faruddin, State University of Makassar</i>	



Student Understanding of Symbols In Math Algebra .....	114
<i>Dian Septi Nur Afifah, Surabaya State University</i>	
Analysis Of Concept Understanding of Trigonometric Ratio's From Student's Initial Ability On Class X.1 Sma Negeri 11 Makassar .....	118
<i>Andi Fauziah Mustafa, Suwardi Annas, Alimuddin, State University of Makassar</i>	
Improving College Students' Understanding On Mathematical Finance Course Through The Use of Post-Hypnotic Suggestion of Hypnotherapy .....	124
<i>Hamzah Upu, Bustang, State University of Makassar</i>	
Designing Learning Continuum As a Basis For Constructing Diagnostic Test (Its Implementation For Algebra Expression) .....	129
<i>Kusaeri, Universitas Islam Negeri Sunan Ampel Surabaya</i>	
The Development Of Internet-Based Assessment of Math Learning Evaluation .....	135
<i>Marwati Abd. Malik, Mas'ud B, University of Muhammadiyah Parepare</i>	
The Influence of The Implementation of Unconscious Mind Program To Students' Mathematics Learning Achievement. ....	142
<i>Muh. Hijrah, Sabri, Ja'faruddin, State University of Makassar</i>	
Development of Teacher Competence Instrument Based On Rating By Students at SMA in Pangkep District .....	149
<i>Muhammad Ilham Rauf, Baso Intang Sappaile, Ruslan, State University of Makassar</i>	
Learning from Misconception to re-Educate Students In Solving Problems of Mathematics.....	152
<i>Nasrullah, Usman Mulbar, State University of Makassar</i>	
Exploration Of Mathematics Representation In Solving Mathematics Problem Based On the Level of Metacognitive Awareness of Grade X-IPA at SMAN 1 Majene .....	160
<i>Nurdin Arsyad, Rezki Amaliyah A. R, State University of Makassar</i>	
Problem Based Learning (Pbl) To Enhance Mathematical Analysis And Evaluation Skills of Junior High School Students .....	167
<i>NurWahidin Ashari, Dadan Dasari, Stanley Dewanto, University of Education and Padjajaran University</i>	
Pre-Service Teachers' Perspective To Identify Evidence Of Teachers' Effort on Developing Democratic Classroom Through Video.....	174
<i>Rahmah Johar, Cut Khairunnisak, M. Ikhsan, Cut Morina Zubainur, Syiah Kuala University</i>	
The Profile of Thinking in Solving Algebra Based On Solo Taxonomy Viewed From The Level of Self-Efficacy At Students of SMP Al-Azhar Palu .....	181
<i>Rio Fabrika Pasandaran, Ilham Minggu, Alimuddin, State University of Makassar</i>	



Is Reforming School Mathematics Curriculum Urgent In Indonesia? .....	187
<i>Sabri, Ilham Minggu, State University of Makassar</i>	
Mathematics Learning At Non-RME Classroom .....	192
<i>Syahrullah Asyari, Ikhbariaty Kautsar Qadry, State University of Makassar and Muhammadiyah University of Makassar</i>	
Effect of Cooperative Learning on Mathematics Achievement of Sixth Grade Students of Mendrelgang Primary School In Bhutan .....	202
<i>Tulashi Devi Pradhan, Naresuan University, Thailand.</i>	
The Description of Mathematical Problem Solving on SPLDV Material Based on Student's Personalities .....	213
<i>Muhammad Zainal Abidin, Ilham Minggu, Muh. Jufri, State University of Makassar</i>	
Rigorous Mathematical Thinking In Geometry Course .....	220
<i>Mega Teguh Budiarto, Pradnyowijayanti, Ikakurniasari, Surabaya State University</i>	
Cooperative Interaction In Learning Mathematics .....	229
<i>Suradi, State University of Makassar</i>	
The Application of The Pigeonhole Principle, Modular Arithmetic, and Permutation in Playing Magical Trick of a Card Game .....	236
<i>Fajar Arwadi, State University of Makassar</i>	
Influence Theoretical Problem Based Learning Model Cooperative Setting (PBMSK) Against Intelligence Personal Development .....	242
<i>Ahmad Talib, Ismail Kailani, Universiti Teknologi Malaysia</i>	
The Effect of Student's Learning Style On Student Resistant Misconception In Chemistry Concept.....	243
<i>Septyadi David Eka Aryungga, Suyono, State University of Surabaya</i>	
The Design Of Instruction Model Based On The Metacognitive Skill For Establishing Problem Solving Ability And The Understanding of Chemical Concept.....	250
<i>Ijirana, Tadulako University</i>	
Preliminary Analyzes Of Metacognition Awareness And Learning Outcome Of Basic Chemistry For Biology' Students FMIPA UNM.....	258
<i>Muhammad Danial, Nurlaela, State University of Makassar</i>	
The Relationship Between Prior Knowledge and Creative Thinking Ability In Chemistry of Students In Grade XI Science at Public High School of Takalar.....	264
<i>Ramlawati, Dewi Satria Ahmar, Melati Masri, State University of Makassar</i>	
Characterization Of Polyblend Of Kelor Seed ( <i>Moringa Oliefera</i> ) With Eggshell As Adsorben for Water Treatment.....	273
<i>Suherman, Sitti Aminah, Solfarina, Tasrik, UIN Makassar</i>	



Effect Of Learning Model Cycle Learning Through Contextual Approach To Learning Chemistry Class VIII IPA SMP 30 Makassar (Studies In The Subject Matter Of The Chemical) .....	281
<i>Ni Luh Asriniasih, Sugiarti, State University of Makassar</i>	
Higher-Order Thinking (Hot) Skills In UN, TIMSS, and PISA Items .....	294
<i>Wasis, Sukarmin, Muji Sri Prastiwi, Surabaya State University</i>	
The Changing of Student Healthy Eating Behavior During Study Food Chemistry Based on Social Cognitive Theory .....	301
<i>Halimah Husain, Alimuddin, Jasruddin, Sudding, State University of Makassar</i>	
Development of Science Practical Courses To Improve The Inquiry Ability of Prospective Teacher .....	309
<i>Rosnita, Universitas Tanjungpura Pontianak</i>	
Multiple-Choice Exams With Pictorial-To-Pictorial Format Representation of Density of Liquid And Aspect Cognitive Measured.....	318
<i>Helmi Abdullah, Jasruddin, D.Malago, Patta Bundu, Syamsul Bachri Thalib, State University of Makassar</i>	
Developing Of Physics Teaching Materials On Based Environmental .....	325
<i>Jasruddin, D. Malago, Helmi Abdullah, State University of Makassar</i>	
The Influence of Learning Strategies and Cognitive Learning Styles on Learning Outcomes In Physics of Students at SMAN 5 Bulukumba .....	330
<i>Kaharuddin Arafah, Kasmiati, State University of Makassar</i>	
Development of Web Based Physics Learning Media for 10 <sup>th</sup> Grade Senior High School In Dynamic Electricity Topic.....	337
<i>Kiar Vansa Febrianti, Fakhrizal Arsi, State University of Jakarta</i>	
Innovative Learning Development Model For Improving High Level Thinking Skills And Student Learning Culture.....	345
<i>Raharjo, Wahono Widodo, Wasis, Surabaya State University</i>	
National Test Quality (UN) at 2012/2013 School Year Of Subjects Physics Lesson Is Evaluated From Difficult Level And Different Power item In Level SMA/MA Study Program Sciences (IPA) In Makassar City.....	352
<i>S.Salmiah Sari, State University of Makassar</i>	
The Influence Of Cooperative Learning Strategies Think Pair Share (TPS) Toward Capability In Problem Solving Of Ecology With Different Cognitive Style.....	360
<i>Amiruddin Kasim, Tadulako University</i>	
Correlation Student Activity of Creating Concept Map and Concept Map Product That Created by Student With Learning Outcomes On The Nervous System Material In SMA Negeri 10 Bulukumba.....	368
<i>Asmayani, State University of Makassar</i>	



Study on Learning Process (Project Based Learning) in Environment Science Course..... <i>Baiq Fatmawati, STKIP Hamzanwadi-Selong</i>	376
The Development Of Chart-Based Instructional Media Of Biology As Biocompass For Protists Subject Grade X Semester I ..... <i>Engka Rukmana, Nurhayati B, Andi Rahmat Saleh, State University of Makassar</i>	380
Scientific Inquiry Skills of Preserved Biology Teacher In Laboratory Activity ..... <i>Fenny Roshayanti, Sumarno, Muhammad Syaipul Hayat, PGRIUniversity of Semarang</i>	389
Utilization of Simple Microscope as Alternative Media at Basic Competency 6.3 Describe The Diversity of Life Organizational System From Cells To Organism at Class VII MTSN Turikale Kabupaten Maros..... <i>Kasmiatang Kadir, MTSN Turikale Kabupaten Maros</i>	396
Item Test Analyzing for Odd Semester Examination of Biology Matter In Class XI Senior High Schools In Tamalanrea District at Makassar City for Academic Years 2013/2014..... <i>Muhammad Takwin Machmud, Hardiyanti M, Yusminah Hala, A. Mushawwir Taiyeb, State University of Makassar</i>	402
The Different Of Science Cognitive Learning Outcome On The Respiratory System By Using Problem Based Instruction Model With Demonstration Method And Without Demonstration Method In Class VIII MTSN Kelara..... <i>Nurul Fatimah Syukri, Firdaus Daud, A. Asmawati Azis, State University of Makassar</i>	412
Implementation of Representation Visuospatial (Vs) Teaching In Cell Biology Concept for Undergraduate Students Mathematics and Biology Education ..... <i>Purwati Kuswarini Suprpto, Universitas Siliwangi</i>	420
Relationship Analysis of Sportin Creating Fasting with The Student Health Aspects Science Foundation Islamic School Foundation Sciences of The Qur'an Al-Muzahwira Makassar ..... <i>Muhammadong, Arifuddin Usman, State University of Makassar</i>	425
Evaluation on Managerial Supervision Program Secondary Education Unit of Supervisors In Poso District ..... <i>Yunita Timbani, MakassarState University</i>	432
Knowledge and Attitude of Primary School Teacher Candidates The Portofolio Assessment ..... <i>Andi Makkasau, Patta Bundu, State University of Makassar</i>	438
Correlation Islamic Values Against Sport In Creating Emotional Intelligence In Students Aliyah Islamic school An-Nahdlah Makassar..... <i>Arifuddin, U, Muhammadong, State University of Makassar</i>	447



Analysis Of The Roles Of School Supervisors In Guiding Teachers To Conduct Classroom Action Research At Senior High School In Bulukumba District..... <i>Erny, State University of Makassar</i>	456
Using Laboratory Simulation In Vocational High School To Model Real World Problems..... <i>Hendra Jaya, Spto Haryoko, State University of Makassar</i>	460
Vocational Education Reform In a Global Era..... <i>Muhammad Yahya, Muhammad Farid, State University of Makassar</i>	466
The Readiness of Students, Vocational High School Building Engineering Department, and Construction Industry In Applying Internship Program In Makassar City ..... <i>Onesimus Sampebua, Anas Arfandi, State University of Makassar</i>	476
Rearranging Free Education Policy In Indonesia(Case Study: Free Education Policy In Makassar) ..... <i>Suarlin, State University of Makassar</i>	482
Utilizing Audio Visual (VCD) To Improve Reproduction Written Skill In English Learning of Teacher Training of Elementary School Program (PGSD)..... <i>Rohana, State University of Makassar</i>	492
The Impact of Policy on Region Expansion To Office Administrative Services In Barombong Subdistrict of Gowa District..... <i>Rudi Salam, Rosdiana, Suarlin, Haedar Akib, State University of Makassar</i>	505
Procedures of Constructing Tests by The High School English Teachers In Makassar..... <i>Suhartina A. Busrah, Baso Jabu, Muhammad Nasiruddin Sainu, State University of Makassar</i>	513
The Development of Science and Technology Through The Professionalism of Lecturers..... <i>Syamsidah, State University of Makassar</i>	521
Positive Expectation Model Development Education Improvement Efforts As A Stress Self-Management Skills Student Vocational High School (SMK) Makassar..... <i>Abd Saman, Muh Jufri, State University of Makassar</i>	527
Application of Structural Equation Modelling (SEM) With Analysis Of Moment Structures (AMOS) ..... <i>Suwardi Annas, Irwan, State University of Makassar</i>	534
Developing Students Books With Topics Matrix Based On Rigorous Mathematical Thinking (RMT) In Curriculum 2013 ..... <i>Ika Kurniasari, Pradnyo Wijayanti, Mega Teguh Budiarto, State University of Surabaya</i>	541
Homomorphisms and Isomorphisms In The Fuzzy Subgroup ..... <i>Sukmawati, Fitriani, STKIP YPUP Makassar</i>	545



Approximate Analytical Solution for SIR Model of Dengue Disease In South Sulawesi Using Homotopy Analysis and Iteration Variation Method .....	548
<i>Syafruddin S., Yulita Molliq Rangkuti, State of Makassar, Medan State University</i>	
Stability Analysis of System of 1 Prey – 2 Predator With Holling Type II Functional Response .....	557
<i>Abadi, Surabaya State University</i>	
Portfolio Optimization Analysis of Stock Using Markkowitz Model .....	561
<i>Ansari Saleh Ahmar, State University of Makassar</i>	
Evolution Equation of Homogeneous Semi-Markov Processes In Health Insurance Additional Premiums Calculation for Outpatient Respiratory Disease .....	565
<i>Faihatuz Zuhairoh, STKIP YPUP Makassar</i>	
Survival Analysis and Its Application In Public Health .....	574
<i>Aswi, State University of Makassar</i>	
Optimal Control of the Forest Arealogistic Growth Model Preserving the Stable Interaction of Temperature, Pressure And Atmospheric CO <sub>2</sub> Content .....	582
<i>Agus Indra Jaya, Rina Ratianingsih, Affandi, Tadulako University</i>	
Measurability of The Henstock Integrable Function of Vector Valued Function On a Locally Compact Metric Space .....	588
<i>Manuharawati, Surabaya State University</i>	
Application of SIR Mathematical Model for Transmission of Dengue Fever Through Collaboration Counseling with Health Center Staff In Lanrisang, Pinrang .....	593
<i>Syafruddin Side., State University of Makassar</i>	
Lattices as Ordered Sets .....	596
<i>Fitriani, Bahar, UIN Alauddin Makassar, State University of Makassar</i>	
Contemporary Correlation .....	599
<i>Sukarna, State University of Makassar</i>	
Screening of Tembelekang Plant ( <i>Lantanacamaralinn</i> ) Active Compounds for Prevention of Infectious Diseases in skin wounds .....	605
<i>Muharram, Iwan Dini, Pince Salempa, Sitti Faika, Ahmad Fudhail, State University of Makassar</i>	
Performance of The Diffusive Gradients In Thin Films (DGT) Technique for Measurement of Labile Cu In Environmental Waters .....	611
<i>Khairuddin, Abd Wahid Wahab, Buchari, Indah Raya, Tadulako University, Hasanuddin University, Bandung Institute of Technology</i>	



Cadmium: a Micronutrient for Diatom Marine Phytoplankton ..... <i>Arifin, M. Sjahrul, Ahyar Ahmad, Indah Raya, Halu Oleo University</i>	618
Antibiotic Activity Test Cellulolytic Bacteria Isolates CC1 And CC2 of The Larvae of The Butterflies (Cossuscosus) ..... <i>Maswati Baharuddin, Abd. Rauf Patong, Ahyar Ahmad, Nursiah La nafie,</i> <i>University of Hasanuddin</i>	627
Synthesis and Characterization of Coke From Charcoal Obtained From Pyrolysis of Coconut Shell ..... <i>Meytij Jeanne Rampe, Vistarani Arini Tiwow, State University of Manado,</i> <i>State University of Makassar</i>	632
Isolation and Structure Elucidation of B-Sitosterol Compound from The N-Hexane Fraction of Root Wood of Pterospermum Subpeltatum C.B. Rob ..... <i>Pince Salempa, State University of Makassar</i>	638
Synthesis of Pesticides Organic of Kirinyuh (Chromolaena Odonata) for Armyworm and Caterpillar Soil Pest on Cabbage and Scallion ..... <i>Ignatius R.S. Santoso, Henny L. Rampe, Manado State University,</i> <i>Sam Ratulangi University</i>	644
Synthesis Molecular Imprinted Polymer Methacrylic Acid (MIP_MAA) using Molecular Imprinting Technique ..... <i>St. Fauziah, Nunuk Hariani, Muh. Bachri Amran, Paulina Taba,</i> <i>Hasanuddin University, Technology Institute of Bandung</i>	647
Structure-Activity Relationship for Larvacidal Activity of Non-Phenolic Compounds from The Stem Bark of Red Mangrove ( <i>Rhizophora Stylosa</i> ) ..... <i>Suyatno, Nurul Hidajati, Surabaya State University</i>	653
The Influence of Variation In The Amount of Starch Adhesive on The Calorific Value of Coconut Shell Charcoal Briquettes ..... <i>Sudding, State University of Makassar</i>	658
Design of Bentonite Acid Modified Electrodes In Cyanide Biosensors..... <i>Catherina Bijang, Abd. Wahid Wahab, Maming, Ahyar Ahmad, Paulina Taba,</i> <i>Pattimura University, Hasanuddin University</i>	666
Analyse of Water Flow, Rainfall and Evaporation In Maros Karst Areas and Sustainable Use In Agriculture ..... <i>Muhammad Arsyad, State University of Makassar</i>	674
Immunohistochemical Study on The Distribution of Adenohypophysial Cell Types In The Pituitary Gland of Bungo Fish ( <i>Glossogobius Cf. Aureus</i> ) from Tempe Lake, South Sulawesi ..... <i>Dwi Kesuma Sari, Andi Tamsil, Kazuhide Adachi, Yasuhiro Tsukamoto,</i> <i>Hasanuddin University, Indonesian Moslem University, Kyoto Prefecture University</i>	682





A Study on The Topographical of Syrinx In Laughing Chicken (Ayam Gaga) From South Sulawesi .....	686
<i>Andhika Yudha Prawira, Novi Susanty, Farida Nur Yuliaty, Dini Kurnia Ikliptikawati, Dwi Kesuma Sari, Hasanuddin University</i>	
Programmable Logic Controller(PLC)-Based Coin-Operated Automatic Charging Station.....	692
<i>Julius O. Paler, Southern Leyte State University</i>	
Computation Model For The FEB/FE <sub>2</sub> B Layer Growth Diffusion Kinetic During The ST41 Low Carbon Steel Powder Pack Boriding .....	695
<i>Sutrisno, State Islamic University Syarif Hidayatullah Jakarta</i>	
Level Relations In The Field Of Health Services Clinic Sanitation By The Numbers Disease Occurrence Environment Based On Work Are A Community Health Center Makassar .....	701
<i>Zaenab, Mawaddah, Ministry of Health Polytechnic Makassar</i>	
Temperature Trend Analisis In Jakarta City: 1981-2010 .....	711
<i>Rosmini Maru, State University of Makassar</i>	
Petrography of Pyrite Minerals from Mineral Deposits Kecamatan Bontocani Kabupaten Bone .....	719
<i>Nurhayati, State University of Makassar</i>	
The Diversity of Anopheles Sppmosquitos Species In Traditional Mining Areas Ondistrict of Rarowatu Utara, Bombana Regency .....	724
<i>Amirullah, Nasaruddin, Waode Harlis, Husnaeni, Halu Oleo University, Open University Makassar</i>	
Phosphate-Solubilizing Actinomycetes Isolated From Rhizosphere of <i>Manihot Utilisima</i> In South Sulawesi .....	734
<i>Alimuddin Ali, Nurlaela Alydrus, Moh. Sahrul Tamsil, Andi Asrini Nurani Ulfa, Muslimin, State University of Makassar</i>	
Mi Lela (Mi Lele Labu): Manufacturing The Wet Noodle From Flour And Clarias Batrachus Flesh With Fortification of Pumpkin .....	738
<i>Andi Nurul Virninda, Sriwidayani Syam, Nuraini Yusuf, Sri Wahyuni, and Reski Ramadani, State University of Makassar</i>	
Development of Biology Instructional Media Based E-Learning Using Joomla and Wondershare Quiz Creator For Skeletal and Muscular System Concept .....	745
<i>Anshar Mansabadi, Asmawati Azis, State University of Makassar</i>	
Identification of Physical And Social Ecotourism Potential In Ramma Valley at Bawakaraeng Mountain South Sulawesi .....	753
<i>Mohamad Padri, Surianto, Andi Andriana, Aji Maulana, A. Nurul Virninda, State University of Makassar</i>	



Diversity and Indicator Species of Herbaceous Understory Vegetation at Forest Dominated With <i>Vitex Cofassus</i> On Mount Bawakaraeng .....	760
<i>Muhammad Wiharto, Hamka L, Fatma H, Syamsiah, Abdul Hamid, Satriani,</i> State University of Makassar	
Developing Students' Leader Character Through Sekolah Alam (A Case Study In Sekolah Alam Bogor Middle School Level) .....	770
<i>Nurhikmah Tenripada,</i> State University of Makassar	
The Effect of Different Grains On Oyster Mushroom ( <i>Pleurotus Ostreatus</i> ) Spawn Growth .....	776
<i>Rukman Muslimin, A. Mu'nisa, Alimuddin Ali, Hartono, Oslan Jumadi,</i> State University of Makassar	
Content of Flavonoid Compounds of <i>Ageratum Conyzoides</i> Leaves Extract From Some Altitude Habitats .....	780
<i>Yuliani, Soemarno, Bagyo Yanuwadi, Amin Setyo Leksono,</i> Brawijaya University	
Mohs Micrographic Modification Surgery In Handling And Rotation Flap Basal Cell Carcinoma .....	786
<i>Irma Suryani, Anis Idris, Anis Irawan Anwar,</i> State University of Makassar, Hasanuddin University	
Marica Goat's Response To The Provision of Superior Feed .....	792
<i>Rosdiana Ngitung,</i> State University of Makassar	
Improvement of DPRD Monitoring Model In The Implementation of The Government and Development to Realize Good Governance In Sinjai Regency In South Sulawesi .....	799
<i>Hasnawi Haris, Manan Sailan, Rifdan,</i> State University of Makassar	
Effect of Organizational Commitment Transformational Leadership Mediates On The Performance of Employees (Study On Islamic Banking In Makassar).....	811
<i>Akbar Abdi,</i> State University of Makassar.	
Society Opinion's Regarding Residential House and Its Environment Toward Human Basic Need In Makassar (In Review Of Physiological And Safety Needs Or Sense Of Security) .....	824
<i>Agussalim Djirong,</i> State University of Makassar	
Development of Model-Based Learning Visual Media Through The Model Four-D Thiagarajan For Expository Writing In Junior High School .....	837
<i>Akmal Hamsa, Ihramsari Akidah,</i> State University of Makassar	
The Factors Affecting Inflation In Indonesia .....	846
<i>Anwar Ramli, Sulfaidah,</i> State University of Makassar	



Y Organ Cells Activity Based On The Concentration Of Ecdysteroid From Haemolymph of Mangrove Crab ( <i>S. Olivacea Herbs</i> , 1979) .....	861
<i>Hasnidar, Yushinta Fujaya, Dody Dharmawan Trijuno, Chair Rani,</i> Indonesian Moslem University, Hasanuddin University	
Joke Models of Development Result and Benefits .....	872
<i>Jokebet Saludung</i> , State University of Makassar	
The Role of Heavy Metal Fe In Sponges (Porifera) From Spermonde Archipelago .....	879
<i>Lydia Melawaty, Kristiana Pasau</i> , Paulus Christian University of Indonesia	
Application of Dynamic Model as Decision Making In Vehicle Emissions Pollution Control At Makassar City .....	884
<i>Moh. Ahsan S. Mandra</i> , State University of Makassar	
Challenges Facing Economic Education In A Free Trade (ACFTA and AEC) .....	891
<i>Muhammad Azis</i> , State University of Makassar	
The Application of Learning Group Investigation Model to Improve Students' Learning Outcome of Agricultural Technology Education Department .....	898
<i>Nurleala S.</i> , State University of Makassar	
The Pakarena Sere Jaga Nigandang, Culture Identity and Makassar Women .....	905
<i>Nurlina Syahrir</i> , State University of Makassar	
Air Pollution Control In The Region of Makassar Indonesia.....	920
<i>Taty</i> , State University of Makassar	
Fuzzy Logic Method to Diagnose Fault In 1-Phase Induction Motor .....	930
<i>Yunus Tjandi, Dyah Darma Andayani, Syarifuddin Kasim</i> , State University of Makassar	
Optimization the Learning Based Competence Integrated With Character Education In Vocational High School .....	937
<i>Riana T. Mangesa, Dyah Darma Andayani</i> , State University of Makassar	
Analysing Items Using the Rasch Model In Pisa 2000 .....	942
<i>Muhammad Tahir</i> , State University of Makassar	
Accuracy Improvement of Sound Absorption Measurement of Material Using Ensemble- Averaging Method With Pu Sensor .....	951
<i>Asniawaty</i> , Hasanuddin University	
Enhanced Fatigue Characteristics of Copper Microstructures Due To Equal Channel Angular Pressing (Ecap) Process .....	959
<i>Kusno Kamil</i> , Indonesian Moslem University	
Die Fähigkeit Des Hörverstehens Der Deutschen Dialoge Durch Audio-Medien .....	967
<i>Laelah Azizah, Suryaty Pasa', Syukur Saud</i> , State University of Makassar	



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Effect Sizes on Econometric Models Using Cohen's $f$ .....	974
<i>Hisyam Ihsan</i> , State University of Makassar	
The Facts about the Use of Technology in English Language Teaching at Senior Secondary Schools .....	983
<i>Nurdin Noni</i> , State University of Makassar	
Instructional Design of PMRI: Investigating Students' Understanding on Angle Comparison .....	993
<i>Sitti Busyrah Muchsin, Achmad Dany Fahrudin, Ummi Salmah</i> , Sriwijaya University	
Students' Mathematical Communication Ability in Linear Programming with Problem Solving Approach Cooperative Setting Based on Cognitive Style on Grade XII Exact SMA Negeri 1 Kelara Kabupaten Jenepono .....	999
<i>Rahmat H.S., Awi Dassa, &amp; Muhammad Darwis M.</i> State University of Makassar	

# THE INFLUENCE OF THE IMPLEMENTATION OF UNCONSCIOUS MIND PROGRAM TO STUDENTS' MATHEMATICS LEARNING ACHIEVEMENT

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## Abstract

This study is categorized as quasi-experimental research that aims to determine whether the implementation of the unconscious mind program influences students' mathematics learning motivation and students' mathematics knowledge. Two classes of experimental units in this study were randomly drawn from two schools in the academic year 2013/2014; they were students of XI IPA 3 class of SMAN 1 Pomalaa as the experiment class and XI IPA 1 of SMA Muhammadiyah Dawi-dawi as a control class. The data collected were the data of students' mathematics learning motivation and students' mathematics knowledge. The data were analyzed using descriptive statistics and inferential statistics. Statistical testing showed that: (1) students' mathematics learning motivation and students' mathematics knowledge of experiment class are significantly different from those of the control class; (2) students' mathematics learning motivation of experiment class significantly influenced the students' mathematics knowledge; and (3) students' mathematics learning motivation of control class significantly influenced the students' mathematics knowledge.

**Keywords:** *Learning achievement, quasi-experimental research, unconscious mind program.*

## 1. Introduction

Mathematics is one of compulsory subjects for all elementary and secondary education. According to Soedjadi (2007:18), mathematics is one of the basic sciences which plays an important role in the development of science and technology. The results of the Trends in International Mathematics and Science Study (TIMSS) 2011 revealed that the mathematical skills of Indonesian high school students ranked 38<sup>th</sup> of 45 countries (Mullis, Martin, Foy, & Arora, 2012:42).

In terms of the improvement of the quality of mathematics learning achievement, up to now the

government is doing a good improvement of facilities and infrastructure, teacher professional resources, and curriculum. However, students' mathematics learning achievement is still low both in school exam and national exam. It might root in the students' belief that mathematics is notoriously a difficult subject. Mathematics is considered a frightening specter that causes students' motivation in studying this subject to be very low. Further, motivation affects learning achievement (Ardhana, in Nurhidayah, 2013:46).

Murphy (in McGrath, 2008:14) expresses "there is a gold

mine within you from which you can extract everything you need to live life gloriously, joyously, and abundantly.” Even so, not many people are able to maximize the potential of their brain. The function of the brain is to think. There are two types of thought processes i.e. conscious and unconscious/subconscious mind process. The conscious mind process is that which is capable of reasoning and making decisions. In contrast, the unconscious mind process is capable of driving our heart to pump blood, ordering the lungs to breathe air, and doing other unconscious activities.

The unconscious mind is a latent potential that is not optimally empowered. According to McGregor (2006:35), the unconscious mind has 88% portion in building the attitude of an individual, while the conscious mind only has 12% share. Learning process always uses the conscious mind. However, the unconscious mind program can also be used to improve the learning optimization. If applied in learning, unconscious mind program can improve memory, focus, and creativity (Yustisia, 2012:70). From the aforementioned figure, it can be imagined how effective the learning process will be if the learning process takes the unconscious mind process into account.

### *1.1 Research Problem*

The problem under investigation in this research is: “is there any influence of implementing the unconscious mind program to students’ mathematics learning achievement?”

### *1.2 Research Objective*

This research aims to know whether the implementation of the

unconscious mind influences the students’ mathematics learning.

### *1.3 Research Hypothesis*

Hypothesis 1: “There are differences in students’ motivation to learn mathematics in the experiment class and control class.” Hypothesis 2: “There are differences in students’ mathematics knowledge in the experiment class and control class.” Hypothesis 3: “There is an influence of students’ mathematics learning achievement on students’ mathematics knowledge.”

## **2. Material and Method**

### *2.1 Unconscious Mind Program*

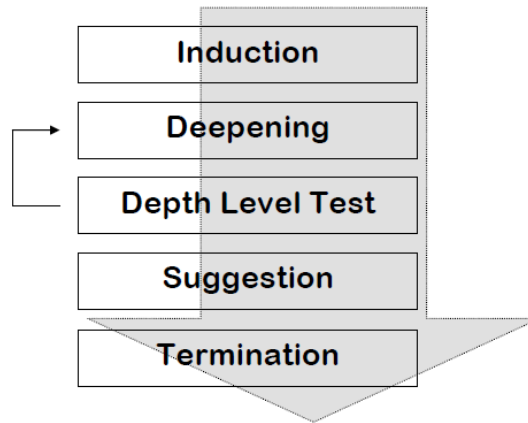
According to Nurindra (2008a:7), the unconscious mind contains all the data in the form of experience, understanding, reasoning an individual starts from birth until this day. The data stored in the unconscious mind can be derived from direct experience or from the inductive experience (derived from the experiences of others). It is important to underline that the data in the unconscious mind can be correct or incorrect, and the unconscious mind cannot distinguish them.

Learning should be much more effective if you use the potential of the unconscious mind. According to Nurindra (2008b:8), the unconscious mind has a gate which functions to select information before being stored in it. The gate determines whether the information is rejected or accepted fully or partially. The gates could be the belief, moral standards, or focus level.

Unconscious mind is very difficult to open by using simple techniques. Nurindra (2008b:14) describes the basic flow of the

unconscious mind program as shown in Figure 1.

**Figure 1.** Basic Flow of Unconscious Mind Program



### 2.2 Type of Research

This study was categorized as quasi-experimental research because the treatment is given to the experimental group only, namely, by applying unconscious mind program in the beginning of the learning process.

### 2.3 Time and Location of Research

This research was conducted in the second semester of academic

year 2013/2014 in SMA Negeri 1 Pomalaa and SMA Muhammadiyah Dawi-dawi situated in Kolaka, South East Sulawesi.

### 2.4 Research Design

After doing the learning process then both classes were given a test to find out the progress of each class. Thus, this research design was control group design-posttest. Table 1 shows the research design.

**Table 1.** Research Design

Class	Treatment	Posttest	
E	X	O <sub>11</sub>	O <sub>21</sub>
C	-	O <sub>12</sub>	O <sub>22</sub>

where:

E = experiment class.

C = control class.

X = implementation of unconscious mind program.

O<sub>11</sub> = mathematics knowledge test of experiment class.

O<sub>21</sub> = mathematics learning motivation of xperiment class.

O<sub>12</sub> = mathematics knowledge test of control class.

O<sub>22</sub> = mathematics learning motivation of control class.

## 2.5 *Experimental Unit and Treatment*

The experimental units in this study were randomly selected by simple random sampling method to take one experimental class and one control class. The experimental class was taught by using the direct instruction model and the treatment given was the application of the unconscious mind in the opening of learning process for each meeting. The control class was taught by using the same model without the implementation of the unconscious mind program.

## 2.6 *Procedure of Research*

### 2.6.1 Preparation phase

In this stage the researcher prepared learning package to use in the learning process. The device included lesson plans, student worksheets, tests of mathematics knowledge, and motivation questionnaires.

### 2.6.2 Implementation phase

In the implementation phase, both classes were taught by using the direct instructional model. The control class was without the unconscious mind program, while the experimental class was set in the unconscious mind program. Both of these classes underwent 14 lessons, respectively.

### 2.6.3 Final phase

After implementing the treatment, the motivation questionnaire was delivered to students and they sit in the mathematics knowledge test. The data of the experimental class the control class were analyzed to test the research hypotheses.

## 3. **Results and Discussion**

### 3.1 *Descriptive Statistics Analysis*

#### 3.1.1 Description of Students'

##### Learning Motivation

The category of the students' motivation to learn mathematics is shown in Table 2.

**Table 2.** Category of Students' Mathematics Learning Motivation

<i>Experiment Class</i>			
Interval	Category	Frequency	Percentage (%)
0.00-1.49	Very Low	0	0.0
1.50-2.49	Low	3	10.0
2.50-3.45	High	26	86.7
3.50-4.00	Very High	1	3.3
<i>Control Class</i>			
Interval	Category	Frequency	Percentage (%)
0.00-1.49	Very Low	0	0.0
1.50-2.49	Low	10	31.2
2.50-3.45	High	22	68.8
3.50-4.00	Very High	0	0.0



3.1.2 Description of Students' Mathematics Knowledge  
Descriptive analysis related to students' understanding of

mathematics scores can be seen in Table 3.

**Table 3.** Description of Students' Mathematics Knowledge

Statistics	Statistic Score of the Experiment Class	Statistic Score of the Control Class
Sample Size	30	32
Maximum Score	100	100.0
Minimum Score	56.0	56.0
Mean	83.6	77.0
Median	80.0	75.0
Mode	80	70.0
Variance	154.3	177.5
Standard Deviation	12.4	13.3

3.2 Inferential Statistics Analysis

3.2.1 Hypothesis Testing

a. Testing Hypothesis 1

The analysis shows that the p-value  $0.006/2 = 0.003$ . Because  $0.003 < 0.025$ , then  $H_0$  is rejected and  $H_1$  accepted. It means that there are significant differences of motivation to learn mathematics between students in the experiment class and the control class.

b. Testing Hypothesis 2

The analysis shows that the p-value  $0.047/2 = 0.024$ . Because  $0.024 < 0.025$ , then  $H_0$  is rejected and  $H_1$  accepted. It means that there are significant differences of mathematics knowledge between students in the experiment class and the control class.

c. Testing Hypothesis 3

The analysis shows that the p-value in the treatment group is  $0.01/2 = 0.005 < 0.025$  and p-value in the control group is  $0.00/2 = 0.000 < 0.025$ . Therefore, then  $H_0$  is rejected and  $H_1$  accepted. It means that there is the students'

motivation to learn mathematics significantly influences students' mathematics knowledge. For the experiment class, the linear regression equation obtained is  $\hat{y}_1 = 14,096 + 0,890x_1$ . For the control class, it is  $\hat{y}_2 = 23,343 + 0,767x_2$ .

**4. Discussion**

This study took place in two classes from two different schools. The students were taught by using the direct instructional model which was teacher-centered in nature. The processes of learning were set by following the syntax of the model as proposed by Arends (2012:246).

In implementation, Phase 1 covering preliminary learning activities integrated relaxation process/unconscious mind program which consisted of the process of induction, deepening, depth-level test, suggestion, and termination. This step was in line with the process of hypnosis described by Nurindra (2008b:14). In order for students to stay focused during the learning

processes, the breaking phase was inserted at the end of Phase-2 and Phase-4. Nurindra (2008b: 8) claims that the breaking state done quickly and repeatedly will be beneficial to help students be in the re-focus condition.

The results of the study reveal that from both experimental unit groups, most of the students had motivation to learn mathematics which was categorized as high level. Further, the number of students with low motivation in the control class was around threefolds higher than that of students with the same motivation category in the experimental class. However, there was a significant difference of the motivation to learn mathematics of students from the experiment class and the control class. This finding was relevant to the results of an investigation by Ja'faruddin (2010).

Descriptively, the difference between the means of students' knowledge of mathematics from the two experimental units was small enough. The same case was evident in the standard deviation of the scores of mathematics knowledge. However, the inferential analysis showed that mathematics knowledge of students from the two classes was different significantly from each other.

Hamalik (2011) points out that the absence of motivation to learn will result in the laziness of the students to learn, thus unconscious mind program is important to implement in learning process. Accordingly, this study revealed that the influence of learning motivation was found to be significant on the mathematical knowledge of the

students. From both classes, we found that the two regression equations obtained were significant. Focusing on the regression coefficients from the equations, we can see that one unit increase of learning motivation contributed to more than 70% unit increase of mathematics knowledge. This reflects the strong correlation between motivation to learn and learning achievement (Narwoto & Suharto, 2013).

The greater mean of mathematics knowledge achieved by the students treated with unconscious mind program is an interesting feature. Although mathematics is notoriously a difficult subject, students in the experimental group still could achieve an average score greater than 80, which is significantly high. This achievement could be claimed as the result of meaningful learning. The finding is supported by Yustisia (2012:70) who argues that programming the subconscious mind can significantly improve an individual's memory, focus, and creativity, which are very important in learning, especially learning mathematics.

## 5. Conclusions

Based on the results of the data analysis and discussion, some conclusions can be drawn as follows:

1. There are significant differences between the students' mathematics learning motivation in the experiment class and the control class.
2. There are significant differences between the students' mathematics

- knowledge in the experiment class and the control class
3. Students' mathematics learning motivation influences students' mathematics knowledge.

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