ICREM 5

The 5th International Conference on Research and Education in Mathematics

22 - 24 October 2011

ITB Bandung - Indonesia

Programs & Abstracts

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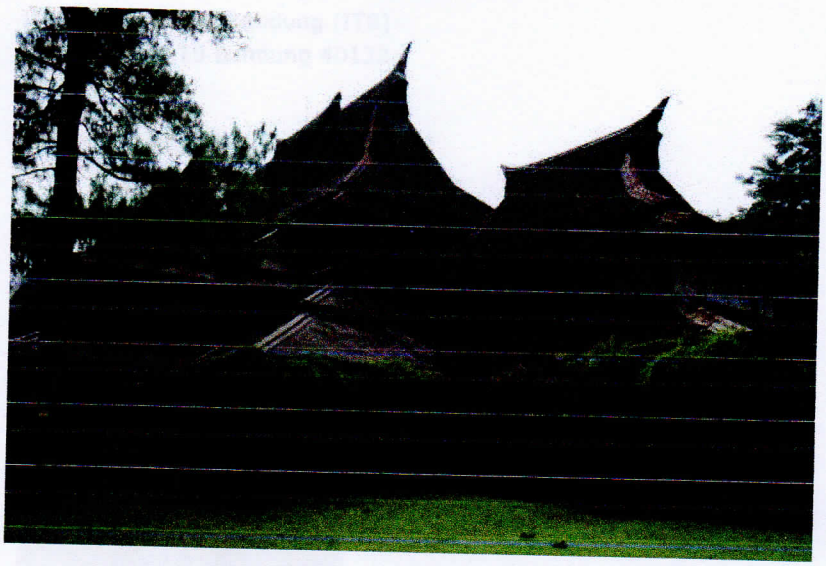
The 5th International Conference on Research and Education in Mathematics (ICREM5)

22-24 October 2011

ITB Bandung - INDONESIA



The International Conference on Research and Education in Mathematics (ICREM) is a biennial conference, started on 2001.
It covers all aspects of mathematical sciences as well as mathematical education.
The present conference is the fifth one.
It is jointly organized by
* Faculty of Mathematics and Natural Sciences, Institut Teknologi Bandung,
* Institute for Mathematical Research, Universiti Putra Malaysia (INSPEM),
* Institute of Mathematics, Vietnam Academy of Science & Technology (IMVAST),
* Indonesian Combinatorial Society (InaCombS) and
* Indonesian Mathematical Society (IndoMS).

The aims of the conference are:
¥ To promote and encourage exchange of ideas on recent discoveries in the field of mathematics, statistics and mathematical education.
¥ To provide a forum for researchers, contributors and users of mathematical knowledge to discuss the current development in mathematics, statistics and mathematical education.
¥ To identify areas of collaborative research between local and foreign researchers.
¥ To strengthen regional linkages among institutions/centers in mathematics development.

Supported by:

- Directorate General of Higher Education, Ministry of National Education Indonesia (DIKTI)
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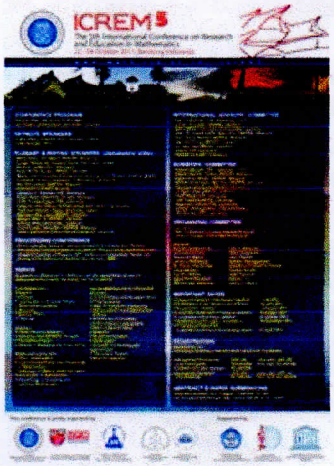

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Souvenirs: Janny Lindiarni

PROGRAM OF PARALLEL SESSION

No	TIME	PRESENTERS	AUTHORS	TITLES
Parallel Session I: Saturday, 22nd October 2011				
CONTRIBUTED TALKS: 7 · 20 minutes, 14.25 - 15.25 & 15.55 - 17.15 WIB				
Paralel Session I Room 1 Analysis				
CHAIR : Bobby Gunara				
1	14.25 – 14.45	Sadeq Thabit (p. 222)	Sadeq Thabit and Hailiza Kamarulhaili	Almost Regularity, π-Normality and Generalized Closed Sets in Topological Spaces
2	14.45 – 15.05	Jong Tan (p. 217)	Jong Tan, Zainul Abidin and Herry Kwee	Application of AdS/CFT Correspondence Superconductor
3	15.05 – 15.25	Oleg Reynov (p. 180)	Oleg Reynov* and Qaisar Latif	Grothendieck-Lidskiĭ theorem for and factor spaces of L_p-spaces
15.25 – 15.55 REFRESHMENT				
CHAIR : Herry Kwee				
4	15.55 – 16.15	Herry Kwee (p. 126)	Herry Kwee, Jong Tan and Zainul Abidin	Asymptotic Freedom in Holographic
5	16.15 – 16.35	Takeshi Iida (p. 102)	Takeshi Iida	A characterization of a multiple class
6	16.35 – 16.55	Bobby Gunara (p. 78)	Bobby Gunara	Static Spacetimes of Constant Scalar Curvature in D-Dimensional Einstein-Maxwell-Higgs Theory
Paralel Session I Room 2 Mathematics Education				
CHAIR : K. Raghavendran				
1	14.25 – 14.45	Farzaneh Saadati (p. 187)	Farzaneh Saadati, Rohani Ahmad Tarmizi, Ahmad Fauzi Mohd Ayub	Utilization of technology in Mathematics learning; Engineering students' perceptions through Facebook interaction
2	14.45 – 15.05	Karlimah (p. 116)	Karlimah	Mathematical Communication Ability and Solving Abilities: Experiment With Pre-Service Elementary Teacher By Using Problem Based Learning
3	15.05 – 15.25	Abdul Halim Abdullah (p. 21)	Abdul Halim Abdullah and Effandi Zakaria	Students' Perceptions towards the Use of Generating Conjectures Learning Environment Using Geometer's Sketchpad Software
15.25 – 15.55 REFRESHMENT				
CHAIR : Abdul Halim Abdullah				
4	14.25 – 14.45	K.Raghavendran (p. 172)	K. Raghavendran	Algebraic Method For Obtaining Higher Derivatives Without Integration
5	16.15 – 16.35	Tri Sagirani (p. 188)	Tri Sagirani and Dewiyani Sunarto	Design And Developing Prototype Application For Math Content Series On Multimedia (Case Study In Surabaya Math Learning Community)
6	16.35 – 16.55	Nelvin Nool (p. 154)	Nelvin Nool	Effectiveness of an Improvised Abacus in Teaching Addition of Integers

7	16.55 – 17.15	Atje Setiawan Abdullah (p. 21)	Atje Setiawan Abdullah	Prediction of Quality Education of Elementary School in Indonesia using Spatial AutoRegressive (SAR) and Expansion Spatial AutoRegressive (ESAR) Models
Paralel Session I Room 3 Applied Math				
CHAIR : Basuki Widodo				
1	14.25 – 14.45	Dumitru Vieru (p. 106)	Dumitru Vieru*, Corina Fetecau, Mehwish Rana	Starting solutions for the flow of second grade fluids in a rectangular channel due to an oscillating shear stress
2	14.45 – 15.05	Constantin Fetecau (p. 71)	Constantin Fetecau*, Nazish Shahid, Masood Khan	Flow of a fractional Oldroyd-B fluid over a plane wall that applies a time-dependent shear to the fluid
3	15.05 – 15.25	J.M.Tuwankotta (p. 226)	J.M. Tuwankotta, E. Hariadi	On Periodic Solution Of A Predator-Prey Type Of Dynamical System With Time Periodic Perturbation
15.25 – 15.55 REFRESHMENT				
CHAIR : Dumitru Vieru				
4	15.55 – 16.15	E. Hariadi (p. 87)	E. Hariadi, J.M. Tuwankotta	Swallowtail In Predator Prey Type Of System With Time-Periodic Perturbation
5	16.15 – 16.35	Basuki Widodo (p. 234)	Basuki Widodo, M. Siing, Sofwan Hadi, Solikhin	Numerical Simulation of Flow Routing for Simulating Flood Propagation in River Flow
6	16.35 – 16.55	Hamzah Sakidin (p. 190)	Hamzah Sakidin	Simplified Hydrostatics UNBab Mapping Function For Global Positioning System (GPS) Tropospheric Delay
7	16.55 – 17.15	Masaji Watanabe (p. 234)	Masaji Watanabe and Fusako Kawai	Modeling and simulation in study on biodegradation of xenobiotic polymers
Paralel Session I Room 4 Statistics				
CHAIR : Nahdiya Zainal Abidin				
1	14.25 – 14.45	Budi Nurani (p. 139)	Budi Nurani Ruchjana	Least Squares Estimation of Generalized Space Time AutoRegressive (GSTAR) Model and Its Properties
2	14.45 – 15.05	Farrukh Mukhamedov (p. 150)	Farrukh Mukhamedov and Mansoor Saburov	Quantum Markov chains vs Gibbs measures
3	15.05 – 15.25	Hasan Husna (p. 101)	Hasan Husna and Noor Fadhilah Ahmad Radi	Modeling the Distribution of Extreme Share Return in Malaysia Using Generalized Extreme Value (GEV) Distribution
15.25 – 15.55 REFRESHMENT				
CHAIR : Hasan Husna				
4	15.55 – 16.15	Muhammad Nur Aidi M.S (p. 29)	Muhammad Nur Aidi M.S and Tuti Purwaningsih	Comparison of Spatial Ordinal Logistic Regression Analysis, Principal Component Spatial Ordinal Logistic Regression and The Non-Spatial Analysis to Predict Poverty Status of Districts in Java Island
5	16.15 – 16.35	Nahdiya Zainal Abidin (p. 25)	Nahdiya Zainal Abidin, Mohd Bakri Adam and Habshah Midi	Hypothesis Tests of Goodness-of-fit for Fr´echet Distribution: A comparative study
6	16.35 – 16.55	Henry Junus Wattimanela (p. 236)	Henry Junus Wattimanela	The Mapping of Main Source Income on Three Group of Islands in Maluku Province - Indonesia

7	16.55 – 17.15	Farah Kristiani (p. 52)	Pricilla Natalia Budiman and Farah Kristiani*	Comparison Between Education In And Savings
Paralel Session I Room 5 Graph				
CHAIR : A. A. G. Ngurah				
1	14.25 – 14.45	Darmaji (p. 55)	Darmaji*, Saladin Uttunggadewa, Rinovia Simanjuntak and Edy Tri Baskoro	The partition dimension of bipar tripartite graphs minus a matchi
2	14.45 – 15.05	Corry Corazon Marzuki (p. 136)	Corry Corazon Marzuki*, A. N. M. Salman, M. Miller	On the total irregularity strengt and paths
3	15.05 – 15.25	Asmiati (p. 47)	Asmiati*, Edy Tri Baskoro	Characterizing all graphs conta cycle with the locating-chromati
15.25 – 15.55 REFRESHMENT				
CHAIR : Asmiati				
4	15.55 – 16.15	Ira Apni Purwasih (p. 171)	Ira Apni Purwasih*, Edy Tri Baskoro, Hilda Assiyatun	The locating-chromatic number Halin graph
5	16.15 – 16.35	Reza Faisal (p. 69)	Reza Faisal*, Edy Tri Baskoro	The locating chromatic number product graphs $P_m \times P_n$ and P_m
6	16.35 – 16.55	A.A.G. Ngurah (p. 152)	A. A. G. Ngurah	On super edge-magic deficien graphs
7	16.55 – 17.15	Farikhin (p. 70)	Farikhin and Ismail Mohd	An Algorithm Based On Interpo For Norm-2 Reduced Order Mo
Paralel Session I Room 6 Algebra				
CHAIR : Susila Windarta				
1	14.25 – 14.45	Rand Alfaris (p. 38)	Rand Alfaris and Hailiza Kamarulhaili	Two New Rings And Fields Base And Jr-3cn
2	14.45 – 15.05	Ismail Abdullah (p. 107)	Shahrina Ismail and Kamel Ariffin Mohd Atan	On the Solutions to the Diophan equation $x^4 + y^4 = 2z^2$
3	15.05 – 15.25	Ismail Abdullah (p. 20)	Ismail Abdullah*, Nur Hafiza Zakaria and Kamaruzzaman Seman	Application of Statistical Tests t the Security Level of Two Xored Crypto Systems
15.25 – 15.55 REFRESHMENT				
CHAIR : Ismail Abdullah				
4	15.55 – 16.15	Zahid Raza (p. 180)	Zahid Raza	On the Critical Group of W_{3n}
5	16.15 – 16.35	Isamiddin S.Rakhimov (p. 58)	Fatanah Deraman and Isamiddin S.Rakhimov*	Isomorphism classes and invari subclass of nine-dimensional Fil algebras
6	16.35 – 16.55	Rosjida Ambawani (p. 42)	Rosjida Ambawani, Rukman Hertadi, Irawati	Algebraic Structure of Genetic Application
7	16.55 – 17.15	Susila Windarta (p. 241)	Susila Windarta and Kiki Ariyanti Sugeng	Cryptographic Hash Function Phillips Sarnak Expander Graph
Paralel Session I Room 7 Applied Math				
CHAIR : Iszuanie Ilias				
1	14.25 – 14.45	Livia Owen (p. 165)	Livia Owen* and Johan Matheus Tuwankotta	Bogdanov-Takens Bifurcation coupled oscillators system wi preserving nonlinearity

2	14.45 – 15.05	Wikaria Gazali (p. 75)	Wikaria Gazali and Abraham Salusu	Particular Solution of Ordinary Differential Equations with Balanced Method
3	15.05 – 15.25	Mohamed Faris Laham (p. 128)	Mohamed Faris Laham and Isthrinayagy Krishnarajah	General Local Solution of Lotka-Volterra Model
15.25 – 15.55 REFRESHMENT				
CHAIR : Wikaria Gazali				
4	15.55 – 16.15	Iszuanie Ilias (p. 102)	Iszuanie Ilias, Habshah Midi and Mohd Armi Abu Samah	The Effective Multi-Criteria Decision Making in Choosing Broadband Providers in Serdang: Analytical Hierarchy Process
5	16.15 – 16.35	Putu Harry Gunawan (p. 79)	Putu Harry Gunawan and Suprijadi Haryono	An Application of Graham Scan Algorithm for Surface Detection in Droplet Surface with SPH Method
6	16.35 – 16.55	Made Sanjaya (p. 191)	Mada Sanjaya and Mustafa Mamat	Numerical Simulation Chaotic Synchronization of Non-Autonomous Fourth Order Circuit and Its Application For Secure Communication
7	16.55 – 17.15	Rizka Zakiah Drajat (p. 63)	Rizka Zakiah Drajat, Zaki Suud, Edy Soewono and Agus Yodi Gunawan	Thermal Hydraulic Analysis of Gas Cooled Fast Reactor using Genetic Algorithm
Paralel Session I Room 8 Math Education				
CHAIR : Saras Krishnan				
1	14.25 – 14.45	Wayan Agustina (p. 29)	Wayan Agustiana	Evaluative Study of Bilingual Mathematical Learning on The National School which International Standard in Denpasar
2	14.45 – 15.05	M.J. Dewiyani Sunarto (p. 61)	M.J. Dewiyani Sunarto and Tri Sagirani	The Thinking Process Profile The Students of Informatics System Department in Solving The Mathematics Problem Based on The Personality Type and Gender
3	15.05 – 15.25	Sahar Bayat (p. 50)	Sahar Bayat, Maryam Kargar and Rohani Ahmad Tarmizi	Mathematics Attitudes among Malaysian University Students
15.25 – 15.55 REFRESHMENT				
CHAIR : Wayan Agustina				
4	15.55 – 16.15	Nor'Ain Mohd. Tajudin (p. 216)	Nor'Ain Mohd. Tajudin, Noor Shah Saad, Nurulhuda Abd Rahman, Asmayati Yahaya, Hasimah Alimon, Mohd. Uzi Dollah and Mohd Mustamam Abd Karim	Mapping the Level of Scientific Reasoning Skills to Instructional Methodologies among Malaysian SME (Science-Mathematics-Engineering) Undergraduates
5	16.15 – 16.35	Saras Krishnan (P.120)	Saras Krishnan and Noraini Idris	Knowledge Dimensions In Hypothesis Test Problems
6	16.35 – 16.55	Yenita Roza (p. 184)	Yenita Roza and Puspita Murni	Implementation Of Realistic Mathematics Education (Rme) Within Cooperative Learning Model To Improve Students' Activities And Achievement In Mathematics At Sma Cendana Pekanbaru, Riau
7	16.55 – 17.15	Rr. Kurnia Novita Sari (p. 195)	Rr. Kurnia Novita Sari*, Udjianna S. Pasaribu	Semivariogram Model and Estimation of Ordinary Kriging (Cases : The Mathematics Scores of The National Final Examination of The Junior High Schools in Bandung City

Paralel Session I Room 9 Graph				
CHAIR : Saib Suwilo				
2	14.25 – 14.45	Dedy Tatanto (p. 221)	Dedy Tatanto*, Edy Tri Baskoro	On Ramsey $(2K_2, 2P_n)$-Minimal
2	14.45 – 15.05	Carol Zamfirescu (p. 138)	Carol Zamfirescu	Planar hypohamiltonian graphs
3	15.05 – 15.25	Kristiana Wijaya (p. 240)	Kristiana Wijaya and A.A.G Ngurah	On Degree-Magic Labelling of
15.25 – 15.55 REFRESHMENT				
CHAIR : Carol Zamfirescu				
4	15.55 – 16.15	Rita Suzana (p. 213)	Rita Suzana, Rizki Amelia and Hilda Assiyatun	Game Chromatics Number of Classes of Circulant Graphs
5	16.15 – 16.35	Suhadi Wido Saputro (p. 192)	Suhadi Wido Saputro*, Edy Tri Baskoro, A. N. M. Salman and Djoko Suprijanto	The metric dimension of comp product of a star
6	16.35 – 16.55	Hadi Muhshi (p. 147)	Hadi Muhshi* and Edy Tri Baskoro	On Ramsey $(3K_2, P_3)$-minimal
7	16.55 – 17.15	Saib Suwilo (p. 212)	Saib Suwilo	Exponents of Two-colored Digraphs Consisting of Two
Paralel Session I Room 10 Applied Math				
CHAIR : Azmin Sham Rambely				
1	14.25 – 14.45	Halimatus-sadiyah (p. 85)	Halimatussadiyah Halimatussadiyah and Mada Sanjaya	Mathematical and Numerical Three-Stage Chaotic Colpitts Oscillator For Wireless Transfer
2	14.45 – 15.05	Tutuka Ariadji (p. 44)	Tutuka Ariadji, Edy Soewono, Prasandi Abdul Aziz, Anas Asy Syifa, Lala Septem Riza, Kuntjoro Adji Sidarto and Pudjo Sukarno	A Robust Method Using Genet Algorithm In Determining An Horizontal Well Direction And Length For A Petroleum Field Development
3	15.05 – 15.25	Sapto Indratno (p. 104)	Sapto Indratno and Alexander Ramm	Dynamical Systems Method for solving ill-conditioned linear a systems
15.25 – 15.55 REFRESHMENT				
CHAIR : Sapto Indratno				
4	15.55 – 16.15	Roslinda Nazar (p. 112)	Khamisah Jafar, Roslinda Nazar*, Anuar Ishak and Ioan Pop	Numerical investigation of MH flow and heat transfer over a stretching/shrinking sheet with magnetic field, viscous dissipation and Joule heating
5	16.15 – 16.35	Ferry Jaya Permana (p. 168)	Ferry Jaya Permana, Dharma Lesmono and Erwinna Chendra	Modelling LQ45 Index Using Gamma
6	16.35 – 16.55	Azmin Sham Rambely (p.177)	Azmin Sham Rambely* and Hamida Ali Shafter	Optimization of Lower Limb Sharing Problem of School Backpack Load Carriage via Muscle Forces
7	16.55 – 17.15	Abdukholik Arzikulov (p. 19)	Abdukholik Arzikulov and Abduhakim Abduhamidov	Ulugbek's seventh trigonome and problems concerning

Paralel Session I Room 11 Analysis				
CHAIR : Andreas P. Wijaya				
1	14.25 – 14.45	See Keong Lee (p. 130)	See Keong Lee	Hypergeometric functions and subclasses of Harmonic Mappings
2	14.45 – 15.05	Wan Sabhi Salmi Wan Hassan (p. 90)	Wan Sabhi Salmi Wan Hassan* and Suzeini Abdul Halim	Partial Sums of certain p-valent functions and certain integral operator
3	15.05 – 15.25	Fiki Akbar (p. 35)	Fiki Akbar* and Bobby Gunara	Local Existence of N=1 Supersymmetric Gauge Theory in Four Dimensions
15.25 – 15.55 REFRESHMENT				
CHAIR : Wan Sabhi Salmi				
4	15.55 – 16.15	Suzan J. Obaiys (p. 164)	Suzan J. Obaiys*, Z.K. Eskhuvatov and N.M.A. Nik Long	The Numerical Treatment of Hypersingular Integrals
5	16.15 – 16.35	Andreas P. Wijaya (p. 239)	Andreas P Wijaya and Wono S Budhi	Non-Linear Inversion for Integral Equation of Scattered Wavefield
6	16.35 – 16.55	Seramika Ari Wahyoedi (p. 232)	Seramika Ari Wahyoedi* and Bobby Gunara	Static Multi-Centered Metric in (n+1)-Dimensional Manifold
7	16.55 – 17.15	Agus Suroso (P. 210)	Agus Suroso*, Freddy P. Zen, Arianto and Bobby E. Gunara	Accelerating Universe from Nonminimal Derivative Coupling in Five Dimension
Paralel Session I Room 12 Statistics				
CHAIR : Irlandia Ginanjar				
1	14.25 – 14.45	Sutawanir Darwis (p. 58)	Sutawanir Darwis and Agus Yodi Gunawan	Exploring EnKF Stability Under Different Type Reservoir Models
2	14.45 – 15.05	Norhaslinda Ali (p.40)	Norhaslinda Ali, Mohd Bakri Adam, Noor Akma Ibrahim and Isa Daud	Tree-based Threshold Model for Non-stationary Extremes
3	15.05 – 15.25	Takuya Yamano (p. 242)	Takuya Yamano	Various bounds on a divergence in nonextensive statistical mechanics
15.25 – 15.55 REFRESHMENT				
CHAIR : Norhaslinda Ali				
4	15.55 – 16.15	Norsida Hasan (p. 88)	Norsida Hasan, Mohd Bakri Adam, Norwati Mustapha and Mohd Rizam Abu Bakar	Sensitivity of Missing Values in Classification Tree for Large Sample
5	16.15 – 16.35	Irlandia Ginanjar (p. 77)	Irlandia Ginanjar	Analyzing Objects, Object Characteristics and Assessor in Sorting Task and Characteristics Data Using Hybrid Distatis
6	16.35 – 16.55	Utriweni Mukhaiyar (p. 149)	Utriweni Mukhaiyar, Udjianna S. Pasaribu, Wono Setya Budhi, Khreshna Syuhada	The Influence of Spatial Weight to the Invers of Autocovariance Matrix of The Generalized Space Time Autoregressive Models
7	16.55 – 17.15	Nora Muda (p. 145)	Nora Muda and Lee Yuen Hoon	Time series analysis of gold production in Malaysia

Parallel Session II: Sunday 23rd October 2011

CONTRIBUTED TALKS: 4 · 20 minutes, 08.00 - 09.20 WIB

Paralel Session II Room 1 Analysis, CHAIR : Sadjidon				
CHAIR : Sadjidon				
1	08.00-08.20	Firdaus (P.228)	Firdaus Ubaidillah*, Soeparna Darmawijaya and Ch. Rini Indrati	HENSTOCK INTEGRAL ON C
2	08.20-08.40	Sutrima (p. 211)	Sutrima	Spectrum of Sturm-Liouville D Familys
3	08.40-09.00	Dylmoon Hidayat (p. 96)	Dylmoon Hidayat	Generalized Continuously Tra Framelet
4	09.00-09.20	Sadjidon (p. 188)	Sadjidon*, Sunarsini and Sulistiyo	2-Normed on sequences spac the dual space
Paralel Session II Room 2 Math Education				
CHAIR : Nor Maizan Abdul Aziz				
1	08.00-08.20	Nelvin Nool (p. 156)	Nelvin Nool	Exploring the Metacognitive P Prospective Mathematics Tea Problem Solving
2	08.20-08.40	Suraiya Kassim (p. 117)	Suraiya Kassim	Learning Sampling Distributio Graphing Calculator
3	08.40-09.00	Adi Setiawan (p. 199)	Adi Setiawan and Hanna Parhusip	Determine Teaching Quality B Based On Student Questionn Statistics
4	09.00-09.20	Nor Maizan Abdul Aziz (p. 49)	Nor Maizan Abdul Aziz, Rokiah Embong, Zubaidah Abd Wahab and Hamidah Maidinsah	Analyzing mathematical transf songket patterns using GeoGe
Paralel Session II Room 3 Applied Math				
CHAIR : Ikha Magdalena				
1	08.00-08.20	I Made Eka Dwipayana (p. 64)	I Made Eka Dwipayana	Mesopredator Release Effects Jalak Bali Population in West Park
2	08.20-08.40	Yekti Widyaningsih (P. 238)	Yekti Widyaningsih, Asep Saefuddin, Khairil A. Notodiputro, Aji H. Wigena	Ordering Dually In Triangles O Hotspot Detection In Nested L Linear Mixed Model For Pover Health In Java Island
3	08.40-09.00	Gatot Hertono (p.92)	Gatot Hertono and Tri Handhika	Implementation Of The Bremm Model
4	09.00-09.20	Ikha Magdalena (p.133)	Ikha Magdalena, Karunia Putra, Janson Naiborhu	Trajectory Following Method f Tracking of Nonlinear Non-Mi Systems
Paralel Session II Room 4 Statistics				
CHAIR : Tarno At				
1	08.00-08.20	Muhammad Nur Aidi (p. 32)	Muhammad Nur Aidi and Resty Indah Sari	Classification of Debtor Credit Status and Determination Amount of Credit Risk by Usin Discriminant Function
2	08.20-08.40	Rb Fajriya Hakim (p. 81)	Rb Fajriya Hakim, Subanar Seno and Edi Winarko	Mining Association Rules of Th Hadiths

3	08.40-09.00	Muhammad Syamsuddin (p. 215)	Muhammad Syamsuddin	Life insurance products under stochastic mortality assumptions: a Bayesian analysis approach
4	09.00-09.20	Tarno At (p. 220)	Tarno At	Analysis of Financial Time Series Data Using Adaptive Neuro-Fuzzy Inference System (ANFIS)
Paralel Session II Room 5 Graph				
CHAIR : Darmaji				
1	08.00-08.20	Suhud Wahyudi (p.239)	Suhud Wahyudi, Sumarno Sumarno and Suharmadi Sanjaya	Metric dimension of graph and it's aplication on the minimum placement of fire censorship in the building (case study in Building F Mathematics Departement FMIPA - ITS)
2	08.20-08.40	Abdul Mujib (p. 148)	Abdul Mujib* and Hilda Assiyatun	Game Chromatic Numbers of Tensor Product Graphs
3	08.40-09.00	Anton Rusnanto (p. 186)	Anton Rusnanto and Kiki Ariyanti Sugeng	Generalized Petersen Graph and Its Expander Properties
4	09.00-09.20	Darmaji (p. 56)	Darmaji*, Edy Tri Baskoro	Further results on partition dimension of corona products
Paralel Session II Room 6 Algebra				
CHAIR : Zaffar Iqbal				
1	08.00-08.20	Ikrom Rikhsiboev (P.181)	Ikrom Rikhsiboev and Isamiddin Rakhimov	Classification of three dimensional complex Leibniz algebras
2	08.20-08.40	Mohamat Aidil Mohamat Johari (p.33)	Mohamat Aidil Mohamat Johari, Kamel Ariffin Mohd Atan and Siti Hasana Sapar	A General Relation Between Sums of Cubes and Triangular Pyramidal Numbers
3	08.40-09.00	Darmajid (p. 57)	Darmajid	The Variety of Chain Complexes
4	09.00-09.20	Zaffar Iqbal (p. 105)	Zaffar Iqbal, Shamaila Yousaf and Sadia Tauseef	Growth rate of the braid monoids $MB(n+1), n \leq 5$
Paralel Session II Room 7 Applied Math				
CHAIR : Nor Azian Aini Binti Mat				
1	08.00-08.20	Anita Triska (p. 224)	Anita Triska and Nuning Nuraini	Mathematical Model of HIV Transmission via Injecting Drug User in One Population
2	08.20-08.40	Donny Lesmana (P. 130)	Donny Lesmana and Song Wang	Numerical Methods for Pricing European Option with Transaction Costs
3	08.40-09.00	H. Serviana (p. 199)	H. Serviana, K. Novianingsih, S. Hadi	Is it optimal control or no?
4	09.00-09.20	Nor Azian Aini Binti Mat (p. 47)	Nor Azian Aini Binti Mat*, Norihan Md. Arifin, Roslinda Mohd. Nazar, Fudziah Ismail	Similarity Solutions for the Flow and Heat Transfer over a Nonlinear Stretching/Shrinking Sheet with Nanofluid
Paralel Session II Room 8 Math Education				
CHAIR : Kusnandi				
1	08.00-08.20	Mohamed Z.G. Al-Agili (P.36)	Mohamed Z.G. Al-Agili, Mustafa Bin Mamat	Factors Affecting Students' Achievement In Mathematics
2	08.20-08.40	Turmudi (p. 224)	Turmudi Turmudi	Scaffolding Metacognitive Questions Practice In Mathematics Learning For Understanding

3	08.40-09.00	Rohani Ahmad Tarmizi (p. 218)	Rohani Ahmad Tarmizi, Wan Zah Wan Ali and Ahmad Fauzi Mohd Ayub	Pedagogical And Cultural Pers... Mathematics Learning: A Prel... Analysis
4	09.00-09.20	Kusnandi (p. 124)	Kusnandi	Framework For Understandi... Topics Of High School Mathematics
Paralel Session II Room 9 Graph				
CHAIR : Akhlaq Bhatti				
1	08.00-08.20	Muhammad Javaid (p. 115)	Muhammad Javaid and Akhlaq Bhatti	On super (a,d)-edge antimagic... of subdivided caterpillar
2	08.20-08.40	Mania Roswitha (p. 183)	Mania Roswitha*, Edy Tri Baskoro, Tita Khalis Maryati and Nugroho Arif Sudibyo	H-magic coverings on some cl... graphs
3	08.40-09.00	Abdussakir (p. 24)	Abdussakir Abdussakir	Detour Spectrum of Complete... Graph
4	09.00-09.20	Akhlaq Bhatti (p. 51)	Akhlaq Bhatti and Muhammad Javaid	On antimagic vertex labeling o... families of linear uniform h-hy...
Paralel Session II Room 10 Algebra				
CHAIR : Rizky Rosjanuardi				
1	08.00-08.20	Faisal Anwar (p. 43)	Faisal Anwar	Auslander Reiten Quiver of Nakayama Algebra type Dy... Graph
2	08.20-08.40	Ariel Paningbatan (p. 167)	Ariel Paningbatan* and Jose Maria Balmaceda	On a bilinear form from a Le...
3	08.40-09.00	Mohamad Rushdan Md Said (p. 180)	Mohamad Rushdan Md Said*, Mohamed Affendee Mohamad, Kamel Ariffin Mohd Atan and Zuriati Ahmad Zukarnain	A Composition Method For S... Chain
4	09.00-09.20	Rizky Rosjanuardi (p. 182)	Rizky Rosjanuardi	Characterization of primitive ... spaces of Toeplitz algebras o... groups
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CHAIR : Adem Kilicman				
1	08.00-08.20	Muhammad F. Rozi (p. 185)	Muhammad F. Rozi*, Rio Wijaya and Bobby Gunara	Einstein Condition versus Sel... Condition in 4 Dimensional T...
2	08.20-08.40	Mohammed Jashim Uddin (p. 229)	Mohammed Jashim Uddin, M.A.A Hamad and A.I. Md. Ismail	Combined effects of thermo... and Brownian motion on MH... boundary layer flow of a nanofluid in the presence of chemical reaction due to momentum and thermal slip boundary co...
3	08.40-09.00	Norlyda Mohamed (p. 142)	Norlyda Mohamed, Daud Mohamed and Shaharuddin Cik Soh	Extremal Properties of Generalized Class of Close-to... Functions
4	09.00-09.20	Adem Kilicman (p. 118)	Adem Kilicman and Omer Altun	On Partial Differential Equati... By Using Differential ransformation Method With... Terms

Paralel Session II Room 12 Applied Math				
CHAIR : Anggha Nugraha				
1	08.00-08.20	Nurul Hidayat (p. 95)	Nurul Hidayat and Rizal Ramdhani	The Application Of The Speech Identification System On Developing Control System Of The Moving Robot
2	08.20-08.40	Malim Muhammad (p. 24)	Malim Muhammad	Calculation Spotrate, Forwardrate and Static Spread Case Study : Bond IDX
3	08.40-09.00	Taufan Marhaendrajana (p. 135)	Taufan Marhaendrajana*	Determination of Reservoir Flow Connectivity by Use of Production Data in A Highly Faulted System
4	09.00-09.20	Anggha Nugraha (p. 160)	Anggha Nugraha and T Basaruddin	The Analysis and Comparison of Algorithm in QR Decomposition

Parallel Session III: Sunday, 23rd October 2011

CONTRIBUTED TALKS: 6 · 20 minutes, 14.45 - 15.45 & 16.15-17.15 WIB

Paralel Session III Room 1 Analysis				
CHAIR : Suzeini Abdul Halim				
1	14.45-15.05	Abudhahir Buhari (p. 53)	Abudhahir Buhari, Zuriati Ahmad Zukarnain, Dr Shamala Subramaniam and Hishamuddin Zainuddin	A Single Photon Quantum User Bi-directional Authentication Scheme over Noiseless Channel
2	15.05-15.25	Wahyu Hidayat (p. 95)	Wahyu Hidayat, Freddy P. Zen and Sparisoma Viridi	The hybrid PCA-ANN in quantitative analysis for odour measurement
3	15.25-15.45	Hairur Rahman (p. 175)	Hairur Rahman	Locally Small Riemann Sums (LSRS) of the Henstock-Kurzweil-Dunford Integral on the Euclidean Space
15.45 – 16.15 REFRESHMENT				
CHAIR : Hairur Rahman				
4	16.15 – 16.35	Suparno Satira (p.196)	Suparno Satira, Seramika Ari Wahyoedi, Sparisoma Viridi and Freddy P. Zen	Temperature of 1-Dimensional Binary Particle System on Vibrating Plate
5	16.35 – 16.55	Suzeini Abdul Halim (p. 82)	Suzeini Abdul Halim and Rashidah Omar	Applications Of Certain Functions Associated With Lemniscate Bernoulli
6	16.55 – 17.15	Nurul Farahain Mohammad (p. 143)	Nurul Farahain Mohammad, Anati Ali and Sharidan Shafie	Unsteady Mixed Convection Boundary Layer Flow past a Sphere in a Micropolar Fluid
Paralel Session III Room 2 Math Education				
CHAIR : Remedios Facun				
1	14.45-15.05	Andi F. Wyrasti (P. 195)	Andi F. Wyrasti	Cooperative Learning By Using Monopoly Games Media in Metoda Matematika I
2	15.05-15.25	Turmudi (p. 225)	Turmudi and Eri Erlina	Constructing Formula Of Pyramid Volume By Comparing Volume Of Prism With The Beach Sand And Container Media In Junior Secondary School: A Lesson Study
3	15.25-15.45	Md. Anowar Hossain (p. 99)	Md. Anowar Hossain, Rohani Ahmad Tarmizi, A. Fauzi Mohd Ayub	Collaborative and Cooperative Learning in Malaysian Mathematics Education

15.45 – 16.15 REFRESHMENT				
CHAIR : Turmudi				
4	16.15–16.35	Remedios Facun (p. 67)	Remedios Facun and Nelvin Nool	Assessing the Number Sense of G Pupils
5	16.35–16.55	Sulistiawati (p.207)	Sulistiawati, Yuni Chairani	Fractal Art In Borobudur
6	16.55 –17.15	Zurita Ismail (p. 108)	Zurita Ismail and Hishamuddin Zainuddin	Coauthorship Networks in UPM
Paralel Session III Room 3 Applied Math				
CHAIR : Rubono Setiawan				
1	14.45-15.05	Tertia Delia Nova (p. 235)	Masaji Watanabe, Tertia Delia Nova and Herman Mawengkang	Modeling and simulation in stud infection process within a poult
2	15.05-15.25	Sparisoma Viridi (p. 231)	Sparisoma Viridi*, Fannia Masterika, Novitrian, Wahyu Hidayat and Freddy P. Zen	Self-siphon: Experiments and si
3	15.25-15.45	Fatimah A. Noor (p. 157)	Fatimah A. Noor, Muhammad F. Sahdan, Panji Achmari, Ferry Iskandar, Mikrajuddin Abdullah and Khairurrijal Khairurrijal	Modeling of Electron Transmit Tunneling Current through an I Oxide-High-k-Gate-Stack by Incl Transverse-Longitudinal Kinetic Coupling and Anisotropic Mass Metal Work Function
15.45 – 16.15 REFRESHMENT				
CHAIR : Masaji Watanabe				
4	16.15–16.35	Nughthoh Arfawi Kurdhi (p. 121)	Nughthoh Arfawi Kurdhi	Analysis of a Virus Dynamics M Beddington-DeAngelish Infecti CTL Immune Response
5	16.35–16.55	Kania D. Laya (p. 129)	Kania D. Laya and Novriana Sumarti	Reserve Requirement Analysis a Dynamic Modelling of Bank Pro
6	16.55 –17.15	Rubono Setiawan (p. 201)	Rubono Setiawan	Stability and Bifurcation Analys Equilibrium Point of Generalized S I R Epidemic Mo Time Delays
Paralel Session III Room 4 Statistics				
CHAIR : Lienda Noviyanti				
1	14.45-15.05	Muhammad Nur Aidi (p. 32)	Dr. Ir. Muhammad Nur Aidi Ms and Umi Mahtumah	Modeling Spatial Autoregressiv Dengue Fever Disease In The C
2	15.05-15.25	Fauziah Maarof (p. 131)	Fauziah Maarof, Aimi Athirah Ahmad and Shamsiah Mohamed	Comparison between the beha of the sampling distribution of coefficient of variation, CVr and the conventional CVc , for samples
3	15.25-15.45	Zobaer Hasan (p. 89)	Zobaer Hasan, Anton Abdulbasah Kamil and Azizul Baten	Higher Moment Capital Asset P Analysis: Evidence from Dhaka Exchange
15.45 – 16.15 REFRESHMENT				
CHAIR : Zobaer Hasan				
4	16.15 – 16.35	Nusar Hajarisman (p. 80)	Nusar Hajarisman, Khairil A. Notodiputro, Kusman Sadik and I Gusti Putu Purnaba	The Mean Square Error of Hier Bayesian Models for Count Da Area Estimation

5	16.35 – 16.55	Lienda Noviyanti (p. 159)	Lienda Noviyanti	Applying Generalized Extreme Value Distribution to the Risks of Extremely Large Insurance Claims
6	16.55 – 17.15	Muhammad Iqbal Al-Banna Bin Ismail (p. 106)	Muhammad Iqbal Al-Banna Bin Ismail, Siti Meriam Binti Zahari, Mohammad Said Bin Zainol	A Simulation Study On Robust Ridge Regression In Regression Based On Weighted Ridge M Estimator (WRM) And MM Estimator (WRMM)
Paralel Session III Room 5 Graph				
CHAIR : Nurdin Hinding				
1	14.45-15.05	Adiwijaya (p. 27)	A. Adiwijaya*, A.N.M. Salman, Djoko Suprijanto and E.T. Baskoro	A characterization of the corona product of a cycle with some graphs based on f-coloring
2	15.05-15.25	Harishchandra Ramane (p. 176)	Harishchandra Ramane, Deepak Revankar and Asha Ganagi	On the Wiener index of a graph
3	15.25-15.45	Alfan Sukmana Praja (p. 169)	Alfan Sukmana Praja and A.N.M Salman	Antimagic labelings of $K_{n,.n}$ (complete bipartite graph) minus a perfect matching
15.45 – 16.15 REFRESHMENT				
CHAIR : Harishchandra Ramane				
4	16.15 – 16.35	Sri Kuntari (p. 121)	Sri Kuntari and Tri Atmojo Kusmayadi	The Eccentric Digraph of The Corona C_n with K_m, C_m and P_m
5	16.35 – 16.55	Mona Elviyenti (p. 65)	Mona Elviyenti and Djoko Suprijanto	New MDS or near-MDS co des over finite rings Z_m
6	16.55 – 17.15	Nurdin Hinding (p. 98)	Nurdin Hinding	The Total Irregular Labelling of an Amalgamation of Cycle Graphs
Paralel Session III Room 6 Algebra				
CHAIR : Sulistyo Puspitodjati				
1	14.45-15.05	Ralph De La Cruz (p. 53)	Ralph De La Cruz, Dennis Merino and Agnes Paras	The Sum of Symplectic Matrices
2	15.05-15.25	Rike Trisnaning Kartika Pratiwi (p. 170)	Rike Trisnaning Kartika Pratiwi and Agung Nursilo	NIST Statistical Testing on Block Cipher Based PRNG
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5	16.35 – 16.55	Lucky Galvez (p. 73)	Lucky Galvez, Rowena Alma Betty and Fidel Nemenzo	Mass Formulas for Self-Orthogonal Codes over the rings $F_q + u F_q$ and $F_q + u F_q + u^2 F_q$
6	16.55 – 17.15	Khaerudin Saleh (p.191)	Khaerudin Saleh	A Lifting From kG to OG Group Algebra

Paralel Session III Room 7 Applied Math				
CHAIR : Arihant Jain				
1	14.45-15.05	Nuning Nuraini (p. 161)	Nuning Nuraini, M. Samy Baladram and Sparisoma Viridi	Rise time of inverted tri... intruder in vibrating gran... Experiments and model
2	15.05-15.25	Yong Faezah Rahim (p. 173)	Yong Faezah Rahim and Mohamed Suleiman	Numerical Solution Of C... Differential Algebraic E... Mix-Multistep Method
3	15.25-15.45	Sharifah Alwiah Abdulrahman (p. 22)	Sharifah Alwiah Abdulrahman	Solving Biomechanical M... System Using Forth Order... Methods
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6	16.55 – 17.15	Dipo Aldila (p. 37)	Dipo Aldila, Edy Soewono and Nuning Nuraini	OntheAnalysisofEffectiveness... tionofMosquitoRepellent... Prevention
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CHAIR : Rohayati Ismail				
1	14.45-15.05	Mohd Zin Mokhtar (p. 144)	Mohd Zin Mokhtar, Rohani Ahmad Tarmizi, Ahmad Fauzi Mohd Ayub and Mokhtar Hj Nawawi	Utilization Of Problem-Ba... Enhance Motivation Towa... Calculus For Engineering S...
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3	15.25-15.45	Rippi Maya (p. 141)	Rippi Maya and Utari Sumarmo	Improving Habits of Mind... Students' Advanced Math...
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CHAIR : Sungkono				
4	16.15 – 16.35	Rohayati Ismail (p. 109)	Rohayati Ismail, Ahmad Fauzi Mohd Ayub and Othman Talib	The relationship between... support, environment and... Mathematic teachers' att... toward ICT in teaching and learning
5	16.35 – 16.55	Andika Arisetyawan (p. 46)	Andika Arisetyawan, Sulistiawati, Yuni Chairani	Analysis Effect Of Mother... Mathematics Learning Toward Conceptual Unde... Ability In Elementary Students
6	16.55 – 17.15	Nurfadhlina Abdul Halim (p. 84)	Nurfadhlina Abdul Halim*, Saiful Hafizah Jaaman Sharman, Noriszura Ismail, Rokiah Rozita Ahmad	Profit Sharing Ratio Mod... Hire-Purchase Contract: ... Optimization And Chance... Approach
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THE THINKING PROCESS PROFILE THE STUDENTS OF INFORMATICS SYSTEM DEPARTEMENT IN SOLVING THE MATHEMATICS PROBLEM BASED ON THE PERSONALITY TYPE AND GENDER

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Problem Solving Skills in Mathematics had been known as an important skill in Mathematics at school. By having problem solving, we could know the advantages of Mathematics in our daily life. Realizing the importance of problem solving, a teacher should try any ways so that the students had the ability in doing that. One of the ways that the teacher could do was by increasing the approach to the students personally and he or she had to realize that every students was different in behavior and moreover in thinking process. He or she had to know the thinking process of the students in order to be able to design the best learning process which made the learning situation was more comfortable.

Psychologists stated that the difference personality is the strongest one that students had. The difference personality could be classified based on the similarity tendency which made the type of personality classification. In this research, the writer used the type of personality based on David Keirsey who classified into 4 types : Rational, Idealist, Artisan, and Guardian.

In this research, the writer used Exploratory Research through a Qualitative Approach. She wanted to know the process the students' thinking at Informatics System Department in solving the Mathematics problem based on personality type classification. This research focused on this department because the writer hoped it could be used as a consideration in designing the learning model for Logic Material and Algoritma as a basic programming subject. The balancing between research subject and the advantages of research, problem solving material that was given to the research subject was computation and logic material which was as a basic for the Algoritma construction. the data collection was conducted by combining interviewing method and observation through the subject's result in written and behavior. The step of problem solving used Polya step which was classified into some steps in order to get Thinking Process Profile in detail. The research procedures were : (1) Determining the Research Subject, (2) Data Collection, (3) Data Analysis and (4) Research Report.

The research result show that every personality types had different Thinking Process Profile in problem solving and so did the similar personality type. Thinking Process Profile in problem solving was also different between male and female.

This fact made the teacher realized that it was important to know the thinking process profile on every students. By knowing that the teacher could make the learning model based on the thinking process profile of the students according to The Personality Type Classification and Gender at Informatics System Department

Keywords: thinking process profile, mathematical problem solving, the classification of personality types.

A. Introduction

As already noted, one of the subjects in the school of mathematics achievement of objectives in order to be able to support learners have the ability to think critically, systematic, logical, and creative problem solving. Simon (2000) states that through resolution learners can construct concepts in more perfect, because through the problem solving mathematics, learners are required to more actively use concepts that have degree in a variety of new situations that are encountered

To realize the importance of the ability of solving problem for learners, as well as in the Department of information systems, educators need to think seriously a way so that the resolution was welcomed by each participant students, and it can be used not only to solve math problems, but also problems in his life. One of the ways that can increase the ability of learners is to provide the appropriate teaching methods, in order to achieve the best results. Teaching methods are reviewed in terms of psychology closely related to answer the question "to whom" mathematics are taught. Methods that do not comply with the learners will not be able to digest, giving rise to frustration in the learning of mathematics, especially in mathematical problem solving. Similarly should be realized that the suitability of a method will be different on each of the learners.

Some psychologists argue that the difference between humans occurs due to the influence of different personalities. In 1984, in his book *Please Understand Me* I and II, David Keirsey, a professor in psychology from California State University, characterize the personality into 4 types, namely, *Rational, Idealist, Artisan, and the Guardian*. Classification is done by Keirsey is based on the idea that a real difference can be seen from a person's behavior. The behavior of a person, it is a reflection of what looks and perceived by the people. In other words, if someone wants to know the thought by other people, can be read through his behavior

In the world of education, to know the thoughts of a student about the work of a particular problem, it is not seen from his behavior but more specifically from the results of the work. To be able to know the thinking of a participant, one of which can in a way invites learners to discuss with educators, so that the learners want to say what in his thought at the moment working on a particular problem.

To realize the difference in conditions for learners, educators can provide the best teaching method for individual learners. Methods of teaching will be presented by thinking process that learners, and thinking processes is investigated based on personality type that have been grouped based on grouping by David Keirsey.With customized teaching method based on his thinking process, it is expected the process of teaching learning can touch the learners on a more personal, because it was supposed to be learners have a right to be noticed by every educator in private, and not only in classical, where many private merged into one.

In this research, the process of thinking learners in solving mathematical problems can be observed more detail by using the Polya, then it can be observed in more detail, staring from the first step, until the completion is produced by the learners, even the way learners recheck the answer.

The subject is to be used in this research, is a student majoring in information systems, in addition to students from the Department of information systems that will be

specifically examined in this study, will also be examined gender differences. This means the election special on the subject other than the Department of information systems and in every type of personality, will also be differentiated based on gender. This thinking is based on the opinion of Diane F Halpern (2000) in his paper entitled *The science of Sex Differences in Science and Mathematics* which states that in general, indeed there is a difference between mathematical ability, gender based on the thinking process are different, because the involvement of internal factors, so it often gives rise to a different result for each gender.

Based on the above research background, the question of research in this study are: (1) how the profile of the thinking process students majoring in information systems with Rational personality types are reviewed from gender differences in in solving mathematics problem?, (2) how the profile of the thinking process students majoring in information system with *Idealist* personality types are reviewed from gender differences in in solving mathematics problem? (3)How the profile of the thinking process students majoring information systems with *Artisan* personality types are reviewed from gender differences, in solving mathematics problem?, (4) how the profile of the thinking process students majoring in information systems with the *Guardian* personality types are reviewed from gender differences in in solving mathematics problem?.

The purpose of this research is (1) obtain a profile thinking process students majoring in information system with *Rational* personality types are reviewed from gender differences in solving mathematics problem, (2) obtain a profile thinking process students majoring in information system with *Idealist* personality types are reviewed from gender differences in solving mathematics problem, (3) obtain a profile thinking process students majoring in information system with *Artisan* personality types are reviewed from gender differences in solving mathematics problem, and (4) Obtain profile thinking process students majoring in information systems with the *Guardian* personality types are reviewed from gender differences, in solving mathematics problem.

As for the benefits expected from the results of this research are: (1) as a contribution to the theory of the thinking process based on the personality types, and (2) a profile of student thinking process based on personality types are reviewed from gender differences in solving mathematics problem, can be used to model learning materials for the consideration of preparation the course thinking logic and algorithm that are the basic for course of programming in Department of Information systems are adapted to the personality type and gender

B. REVIEW of RELATED LITERATURE

Problems of Mathematics and Mathematical Problem Solving

Troubleshooting becomes central in learning mathematics at any level, because through problem solving, it appears that mathematics can be used in life. Anderson (in Suharnan, 2005) stated the problem occurs because of a gap between the current situation with the situation, or between a current stated with the desired goals. Inside the world of mathematics education, most of the experts stated that the issue is a question or a math problem that should be answered or responded to. In this research, mathematical problems defined specifically as a matter of mathematics that deals with the problem of logic and computing. Specificity is taken to be in line with the aim of this research is to know the thinking process students

majoring in information systems, in mathematical problem solving, where both types of problem will be the basis on some staple courses in the Department of information systems, such as logic and algorithms, and programing courses.

This research will be more focused on the process of thinking learners in an attempt to bridge the gap that is experienced in solving mathematical problems, which at the time learners understand the problem, plan a resolution, in accordance with Polya. So the notion of mathematical problem solving in this research is an attempt of learners to overcome/solve mathematical problems with regard to the kind of logic and the problem of computation

Polya Steps as an Alternative Mathematical Troubleshooting Steps

Polya (1973), in his experience as an educator of mathematics at Stanford University, revealed his discovery to help learners in resolving problems and poured the rest of the troubleshooting steps to get a question in which may be presented to the students as the following: understanding the problem, devising a plan, carrying out the plan and looking back.

Thinking Process

What exactly is the thinking process?. Solso (1995) says that thinking can be defined as the process of generating a new mental representation through the transformation of the information that involve a complex interaction between mental attributes such as assessment, abstraction, imagination, and problem solving. Marpaung (1987) states that thinking or cognitive process is a process that consists of the receipt of information (from outside or from inside your learners), processing, storage and retrieval of information from the memory of learners.

Slavin (1994) expresses the sense of the information processing theory as a theory describing cognitive process, storage, and calling on the back of the human mind. Solso (1995) states a model as information processing: a model proposing that information is processed through a series of stages, each of which performs unique operations. Each stage receives information from preceding stages and passes the transformed input along to other stages for further processing.

By using the theory of information processing research, in this time, the process of thinking learners can be described as mental activities performed by students at the time students receive information from outside himself, process information, store information, and the call back information from the in memory when the information is needed, to resolve the problems of mathematics.

To find out the process of thinking on the subject, there are some signs or characteristic that will be used, namely: observations on the lookout (including facial expressions, body movements), and of the results of the work it does.

Personality Type Classification

In intercourse and conversation everyday, we must realize that everyone is behaving, acting, doing, speaking, thinking differently. Actually, what causes the differences between individuals to each other?. If observed, the differences between individual learners due to differences in behavior that is visible of the learners. The difference this behaviour by psychologists are often referred to as personality.

Personality is defined as depictions of conduct specifically descriptive without giving the value. In 1984, David Keirsey is a professor in psychology from California State University, characterize the personality into 4 types, namely the *Guardian, Artisan, Rationa*l *Idealist*. This classification is based on how one obtains its energy (*Extrovert* or *an Introvert)*, how does one retrieve information (*Sensing* or *Intuitive)*, how does one make a decision (*Thinking* or *Feeling*) and how the basic style of his life (*Judging* or *Perceiving*). Of course each of these personality types will have a distinct character in solving mathematical problems.

Keirsey's personality types as named classification *The Keirsey Temperament Sorter (KTS)*. KTS is a personality classification designed with the goal of helping people to better understand itself, which was first introduce by the book by David Keirsey himself, with the title of the *Please Understand Me*, in 1984 and *Please Understand Me II* in 1998

In order to classify someone with appropriate dye test, Keirsey personality classification, which is listed in the book *Please Understand Me* (1984). By using test sheets, then it can be known with certainty the tendency of every learner, on one particular personality type.

Keirsey also argued, that what appears in the behaviour of a person, a reflection of what he thinks about. Inside the world of education, the results of a learner thinking, it will be seen through the results of his work on the matter given to him, either in practice or in the test.

In addition to differences based on personality types, the other difference is that on gender differences. There is some research with respect to the ability of mathematics based on gender, including Fennema (1990) find educators to gender differences, very influential participant students on the ability of the learners.

C. RESEARCH METHOD

Type of Research

These include exploratory research with qualitative research approach. Exploratory research explores said because of the thinking process, with its main data in the form of words that are coupled to a sentence. Qualitative methods for the determination of the profile selected student thinking in solving mathematical problems set in the natural and primary instrument is the researcher's own research. The analysis is done deeply in the students about mathematical problem solving, after the students were divided by personality type.

This research seeks to uncover the nature of the symptoms that arise from the subject. The fact is used to formulate are empiric profile thought process students based on personality type classification that is traced through an interview-based tasks to each subject. In the interview researchers acting as a neutral observer, which aims to subject can reveal the process he thinks in math to solve the problem clearly and naturally doubtless. It is also to minimize the contamination or influence from the mind of the interviewer.

Subject of Research

The subject is taken among college students majoring in information systems. Starting from a College in Surabaya, and if insufficient data, will be submitted to other colleges have a Department of information systems, until the entire data is awarded.

Research Data Collection

1. Engineering Data Collection

Methods of data collection used in this research is a combination of methods of interview and observation of results of the written work of the subject as well as the behaviour of the subject. In General, the process used in the data retrieval is an interview-based tasks. Patton (Khabibah, 2006) raised the question in the interview can be a question of knowledge and behavior.

Knowledge questions are questions that are intended to reveal the thinking processes of the subject of what he deems as factual information that is being researched. Observations of the behaviour is the observation that intended to uncover the descriptions of experiences, behaviors, actions and activities that have been observed by the researcher, in hopes of accessing the perception of the subject. This observation is done because the classification is done based on personality types, where the differences in the behavior of a differentiator between types. Audio visual used to record the oral answer information and behavior of the subject can be captured through the audio visual. In this way will be fetched data is recorded. A few things to note in this interview (Alwisah, 2003) were the objectivity and neutrality. Objectivity refers to the relationship of the interviewer and the subject. Neutrality refers to a psychological relationship between the answers or opinions of the respondents. In order to be well-documented, then data capture good audio and visual material recorded in order to play back to watch more carefully.

2. Data Collection Instruments

Because this is a qualitative research study, the researchers acted as the main instrument in collecting data, which is assisted by an instrument supporting such instrument classification type, instrument of mathematical problem task sheet and guidelines for the interview. Bogdan and Biklen (1992) say that one of the characteristic of qualitative research is the nature of the (setting) research that is natural, which is the source of the data being searched and collected directly by researchers, not through the questionnaire.

3. Data Collection Procedure

The collection of data in this study is to gain a profile subject thinking process in solving problems. In order to get the research data, then the stages that are done is the determination of the test reclassification personality types (as auxiliary instrument), the determination of the subject, the determination of problem-solving, determine the points will be seen in order to know the thought process students in solving math problems and perform data retrieval.

Data Analysis

1. Data analysis techniques and procedures.

Moleong (2006) said that the analysis of qualitative data is done in a series of processes, meaning the data analysis can be done already since data collection in the field and ended at the time of preparation of the report of the research. The process of data analysis in the study was done with these steps:

a. Study data

Examine the data available from various sources, namely from the interview, and observation of the behaviour and the results of the work of the subject. Study of data is done by collecting all the data available from various sources.

b. Hosted data reduction.

Reduction of data intended to focus for selection, description, and transforming raw data. In this study, the reduction of data will be done by grouping the data. This grouping of data is done by first doing a transcript of the interview.

c . Checks the validity of data

Data validation is performed by performing repetitive checking with time and different tools. By Patton (in Moleong, 2006) it is classified in the triangulation of sources that compare and check back at a confidence level of the information obtained through time and different tools. In this research was conducted twice. The distance between the first and second proof-checking is eleven months.

Data or information obtained through interviews on the first compared data or checking of the information obtained through interviews on the checking of both. Similarly, data or information obtained through pieces of written work on the first compared data or checking information obtained through pieces of written work on checking of both. Data or information is said to be valid if there is consistency, common views, opinions or thoughts on the first and second proof-checking.

d. Data exposure.

Exposure data here includes the classification and identification. This is intended to facilitate drawing conclusions from such data. So data written here has been organized and categorized well.

e. Interpretation of the data and draw conclusions.

Withdrawal of a conclusion based on the results of the analysis of the data has been collected, whether obtained using test and obtained from the results of the interview. The next withdrawal of conclusions on research aimed at formulating a profile of student thinking process in mathematical problem solving.

2. Research Data

Research Data in this study is in the form of oral and written response from the given problem as well as activity subjects in mathematical problem solving. The Data collected is the subject of the thinking process in mathematical problem solving, by following the steps of Polya. Interview is conducted so researchers get the subject thought process in mathematical problem-solving using a sequence of Polya, i.e. the subject thought processes in problem- solving, planning, problem solving, plan, and carry out checks back an answer.

D. Exposure results of Data collection and Data analysis.

Exposure to the results of data collection is carried out by proposing data collection, results in the form of a transcript of the interview, which was presented in the Appendix of the dissertation's analysis of data to uncover the thinking process of the student's profile in solving mathematical problems, be analyzed based on data obtained with the following stages of conducting an analysis of the personality type classification test results, conduct analysis determination of the subject, conducted an analysis of the problem-solving, doing this grouping of data, do data analysis.

Further information of the results of each stage is as follows:

1. Perform an analysis of the personality type classification test results

Personality type test results of classification done by the test sheet of David Keirsey reclassification of a number of students majoring in Information System of private colleges in Surabaya, producing students who belong to the type, *Rational type, Idealist type, Artisan type, and the Guardian type.*

2. Perform an analysis of the determination of the subject.

   After the test reclassification personality types is done, then the next step is to choose the subject of research. From the overall results of test assignment type personality eventually researchers get 8 subjects each 2 subject to any type, which is represented by one male and one female.

3. Perform an analysis of the problem-solving

   After looking for some problem that allows meeting the criteria as specified in chapter III, then was elected to the 1st question of procedural, 1 problem, 1 a matter of logic, and computation. In order to better convince themselves that the matter of selected actually will be able to achieve the desired goal, it is a matter of validated by 3 mathematics education experts. The problem presented in the expert, it consists of 3 problem-solving. However, after considering the opinions, advice or assessments of the expert, ultimately selected 2 courses from 3 problems solved. Problem number 1 represents a matter of computing, and the question of the number 2 represents a matter of logic. The name of the expert and the validation results of problem-solving are listed in the Appendix.

4. Doing this grouping of data.

   Grouping the data will be made against any subject, at any point the thinking process that will be known by researchers. At each step the beginning Polya, subjects were given the opportunity to consider in advance what will be done in a way that would be chosen or preferred by the subject. Then the researchers observe behavior and if any, the results of the work of the subject. After the subject expressed understanding, then held the interview to find out the thinking subject at each step, with the bullet points as it has been determined. The result of a transcript of the interview, then grouped in order to obtain profile of thinking process each type in each step of Polya.

5. Perform data analysis.

   After the grouping of data is done, the next step is to perform data analysis. Data analysis will be conducted on each subject for each problem.

E. Discussion of the Research Results

In this chapter are to be discussed research results that have been done, but it will also be discussed the limitations of the research and other aspect that can be used for advanced research samples obtained research discussions are: Process Thinking Profile Subject RM (Rational Male) in understanding the Computational Problems on points 1.

Points of thought process : Capture the situation in a matter of

Profile process thinking subject RM : The situation in question was captured by reading the whole matter consecutively and intact, with pronounced, especially on the question is read twice, indicating the subject considers the question is important.

In order to understand the problem well, the subject of doing visualization in the form of writing, in the form of meaning in each sentence, with the help of symbol. It appears that the subject had already begun planning for problem solving.

Points of thought process : Find things that are known and things that are asked

Profile process thinking subject RM: The subject is looking for things that are asked and is known as a calm, confident, sort, pointing to the pen. It is known, based on the questions, namely by seeking sentences of information that can be used to answer the question.

What is asked, was found unsubstantiated, the kind of phrase that is used, i.e. the sentence commands that use the word "determine".

F. Closing

The Conclusion are : a. Based on the results of the analysis of the data refers to research questions can be summed up as follows:

In understanding the problem Rational Male type did based on order of the sentence on the problems by taking the main sentence and then it was symbolized. In designing the problem solving, this type wasn't based on the specific formula and analyzed the sufficient information which was stated at the problem, based on an information unit, he used the design that he had made for the problem solving. While the Rational Female looked for the relation between information at the problem, underlines the problem that she had ever known in her daily life.

In understanding the problem, Idealist Male Type did based on order of the sentence on the problem, and shook the pen. While in designing the problem solving, this type used the formula that he had got and analyzed the sufficient information that was stated on the problem based on the usage of information. When he did the problem solving. It was based on the design that he had made before and checked the calculation. While the Idealist Female in understanding the problem, doing visualization with underlines the sentence that she think it important.

In understanding the problem, Artisan Male Type did based on order of the sentence on the problem by taking the main sentence and had a lot of body movement. While in designing the solving, this type didn't use the formula that he had got and analyzed the sufficient information on the problem based on the information usage. When he solved the problem wasn't appropriate with the design that he had made. He used another way and rechecked the calculation that he had done. On the other hand Artisan Female Type understood the problem by making a simple written for every main sentences, problem solving was based on the design that she had made.

In understanding the problem Guardian Male Type did based on order of the sentence on the problem by taking the meaning of the sentence, marking the important part, while I designing the problem solving, this type didn't use the formula that he had ever got and analyzed the sufficient information on the problem based on the information usage when he solved the problem was based on the design that he had made and rechecked the solving and the calculation. On the other hand Guardian Female Type understood the problem by making the simple written on every main sentences, solving the problem wasn't appropriate with the design that she had made before but she used in a different way.

b. In resolving the problems of mathematics, every student is seen to have a different thinking process, although in the end results of troubleshooting the same. Profile of the thinking processes of each personality type and gender can be seen in the Appendix.

c. Faculty members will be aware of differences of thought processes in each student. One way is by grouping students according to the type of personality, so that in carrying out the process of teaching and learning, students feel more valued individually and not in General, where a lot of personality to become one.

Suggestions

Based on the results of this research the researchers give suggestions as follows:

a. After thinking process on the profile of each type is obtained, then the research can proceed with the creation of the learning model in accordance with the profile of the thinking process. A model of learning which is planned to be developed, one of which is a model of learning for courses Logic and Algorithms in the Department of information systems, in order to assist students in mastering Basic programming concepts

b. Research can continue to use problem-solving that is wider than just computation and logic, and in other departments as well as on the lower level.

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