



PROCEEDING
 INTERNATIONAL CONFERENCE ADRI - 5
 2017

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Scientific Publications Toward Global Competitive Higher Education

Ballroom Theater - Pinisi Tower 3rd Floor
 Universitas Negeri Makassar
 21- 22 January 2017



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FOREWORD

The theme of international conference ADRI – 5 is Scientific Publications toward Global Competitive Higher Education. This conference is an annual academic event that holds as a part of events series of inauguration to DPD ADRI SULSEL period 2017 - 2021. This proceeding consists of all accepted and supplementary paper. They are also presented in the conference. All papers are contributed by researchers who are not only academic member of ADRI but also those who come from many area disciplines such as teachers, practitioners, and students. It is hoped that this proceeding will be used well as academic references to share knowledge in produce quality scientific publication to build competitiveness of the higher education in the globalization era.

Makassar, 22 January 2017

Editor



INTERNATIONAL CONFERENCE ADRI - 5

"Scientific Publications toward Global Competitive Higher Education"

THE SCHEDULE OF INTERNATIONAL CONFERENCE ADRI - 5

Theater Room - 3rd Floor Pinisi Tower UNM, 21 January 2017

TIME	ACTIVITY	PRESENTER	PIC
08.00 – 09.00	Registration		Committee
09.00 – 09.05	Opening ceremony	<i>Master of Ceremony (MC)</i>	
09.05 – 09.10	Singing Indonesia Raya	Dirigent	
09.10 – 09.30	Inauguration of DPD ADRI Sulsel	Dr. Achmad Fathoni Rodli, M.Pd.	MC
09.30 – 09.40	Organizing Report	Chairman Committee Dr. Faizal Amir, M.Pd.	MC
09.40 – 09.50	Speech as Chairman of DPP ADRI Sulsel	Prof. Dr. Husain Syam, M.TP.	MC
09.50 – 10.00	Speech as Chairman of DPP ADRI	Dr. Achmad Fathoni Rodli, M.Pd.	MC
10.00 – 10.10	Speech of Ministry	Dr. Ir. Agus Puji Prasetyono, M.Eng. (Expert Staff of Ministry of Research, Technology and Higher Education)	MC
10.10 – 10.20	Speech of Vice Governor of South Sulawesi	Ir. Agus Arifin Nu'mang, M.Si.	MC
10.20 – 10.40	Cultural Action	Traditional Dance	MC
10.40 – 10.50	Souvenir Gift	Given by Chairman of DPD ADRI SULSEL	MC
10.50 – 11.00	Coffee Break		
11.00 – 12.00	Speech of Keynote Speaker (Expert Staff of Ministry of Research, Technology and Higher Education)	Dr. Ir. Agus Puji Prasetyono, M.Eng.	<u>Moderator:</u> Widya Karmila Sari
12.00 – 13.00	Lunch Break		Committee
13.00 – 15.00	Speech of Invited Speaker (Panel Session)	1. Prof. Dr. Ruzairi Abdul Rahim (UTHM Malaysia) 2. Dr. Ir. Gatot Hari Priowirjanto, M.Sc. (Director SEAMEO, Bangkok) 3. Dr. Achmad Fathoni Rodli (DPD ADRI Pusat) 4. Dr. Anton Muhibuddin (JSPS - Japan)	<u>Moderator:</u> Widya Karmila Sari, S.Pd., M.Pd.
15.00 – 17.30	Parallel Session Ballroom Lantai 2, Room 1	National & International Presenter	Moderator: Dr. Syafruddin Side
15.00 – 17.30	Parallel Session Ballroom Lantai 2, Room 2	National & International Presenter	Moderator: Dr. Hendrajaya
15.00 – 17.30	Parallel Session Ballroom Lantai 2, Room 3	National & International Presenter	Moderator: Dr. Wahira
15.00 – 17.30	Parallel Session P3G Lantai 3, Room 1	National & International Presenter	Moderator: Zaenal Abidin, M.Si.
15.00 – 17.30	Parallel Session P3G Lantai 3, Room 2	National & International Presenter	Moderator: Faisal Najamuddin, M.Eng.



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**THE SCHEDULE OF INTERNATIONAL CONFERENCE
- PARALLEL SESSION -**

Ruang : Ball Room I Lt.2
Moderator : Dr. Syafruddin Side, M.Si.

Time	SPEAKERS	INSTITUTION	PAPER
15.00 – 15.30	Nurlita Pertiwi	Universitas Negeri Makassar	Environmental Value Of River Bank
	Faizal Suyuthi	Fakultas Teknik Universitas Pejuang R.I	Correlational Study Of Environmental Science And Education Levels With Concern For Environment
	Muhammad Amin Syam ¹ , Andi Ilham Samanlangi ² , La Ode Muh. Yazid Amsah ³	^{1,2,3} Jurusan Teknik Pertambangan Fakultas Teknik Univrsitas Pejuang Republik Indonesia	Groundwater Modelling To Predict Flow And Negative Impacts Of Groundwater Abstraction
	Ritnawati ¹ , Enny Tri Mahyuni ² , Andi Amrullah ³	¹ Jurusan Teknik Pertambangan Fakultas Teknik Univrsitas Pejuang Republik Indonesia	Acid Mine Treatment Method Bioremediation Coal Mine Using Bacteria And Thiobacillus Thiobacillus Ferrooxidans Thiooxidans
15.30 – 16.00	Nur Asia Umar ¹), Sri Mulyani ²), Ida Suryani ³), and Muh.Hatta ⁴)	¹ Faculty Fishery Cokroaminoto Makassar University, ² Faculty Fishery Bosowa University ³ Faculty Agronomy Cokroaminoto Makassar University, ⁴ Faculty Marine Science and Fishery Hasanuddin University	Model And Simulation Of Relationship Tropodinamik Waters Of Lake Tempe, Wajo Disctrit.
	Slamet Widodo ¹ , Saifuddin Sirajudin ²	¹ Universitas Negeri Makassar ² Hasanuddin University	Effect Long Drying On The Quality Of Flour Fish Mujahir (<i>Oreochromis Mossambicus</i>) And Fish Sardenilla (<i>Sardinella Aurita</i>)
	Maimuna Nontji		Potential Analysis of Methane Gas Reduction by <i>Methanotrophs</i> Bacteria from Rice Field
	Muhammad Wiharto ¹ , Herlinda Haruna ² , Fatma Hiola ³ , Muhammad Wijaya ⁴ , Hamka L ⁵	Universitas Negeri Makassar	Analysis Of Vegetation Saplings Used In Mixed Forest Burnt Bawakaraeng Mountain
16.00 – 16.30	Yiyin Klistafani	Politeknik Negeri Ujung Pandang	Experimental And Numerical Study Of Turbulent Flow Characteristic In Asymmetric Diffuser
	Adriyani Adam ¹ , Sukardi ² , Hasir ³ , Agus Erwin Ashari ⁴	¹ Health Polytechnic of Mamuju ² BKKBN of West Sulawesi Province	Factors Related To Early Age Marriage At Mamuju District
	Lilies Anggarwati Astuti	Universitas Muslim Indonesia	An Effect Of Centrifugation Speed, Centrifugation Duration, And The Use Of Anticoagulants (Edta And Citrate Acid 3.8%) Of The Quantity



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Time	SPEAKERS	INSTITUTION	PAPER
			Of Platelet Rich Plasma (PRP)
	Rukli	Universitas Muhammadiyah Makassar	Characteristics Analysis Of Math Items Type On Data Trend In International Mathematics And Science Study
16.30 – 17.00	Amal Said	Faculty of Agriculture Makassar Islamic University	Mastery Rights Of Agricultural Land Management In South Sulawesi
	Harapin H. A ¹ , Napirah ² , and S. Wanci ³	Faculty of Animal Science, Universitas Halu Oleo	Body Weight And Carcass Percentage Of Male And Female Local Pigeon (<i>Columbia Livia</i>) In Kendari City
	Nurnaeni	Academy of Midwifery (AKBID) Gunung Sari Makassar	Analysis Of Effect Of Motivation Nurse Nursing Documentation Of Filling The Medical Record Files
	Nilawati Uly ¹ , Ratnasari Iskandar ² , and Ririn Eka Puspitasari S. ³	¹²³ STIKES Mega Buana Palopo	Factors That Related With The Elderly Activeness In The Utilization Of The Elderly Posyandu
17.00 – 17.30	Musbir ¹ , Sudirman ² , and Ridwan Bohari ³	Department of Fisheries, Faculty of Marine Science and Fisheries, Hasanuddin University.	The Resources Of Spiny Lobster (<i>Panulirus</i> spp) In Southern Coastal Waters Of Bulukumba Regency
	Riza Sativani Hayati	Biology Education Department, Mumammadiyah Makassar University	Potential Leaf Extract <i>Orthosiphon Aristatus</i> As Growth Inhibitor Of <i>Candida Albicans</i>
	Nurfaizah AP.	Faculty of Education University Negeri Makassar	The Implementation Of Problem Based Learning (PBL) Model To Improve Critical Thinking Ability In Civics Learning To Fifth-Grade Students In SD Inpres 10/73 Bajoe Eastern Tanete Riattang District Of Bone
	Ambo Dalle	Universitas Negeri Makassar	The Effectiveness Of Cooperative Learning Model Concept Mapping In Learning Writing Skill In German Language



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THE SCHEDULE OF INTERNATIONAL CONFERENCE - PARALLEL SESSION -

Ruang : Ball Room 2 Lt.2
Moderator : DR. Wahira, M.Hum

TIME	SPEAKERS	INSTITUTION	PAPER
15.00 – 15.30	Hardianto Djanggih ¹ and Aan Aswari ²	¹ Law Faculty Universitas Tompotika Luwuk ² Law Faculty Universitas Muslim Indonesia	Information Technology Crimes Against Children As Victims
	Lu'mu	Fakultas Teknik , Universitas Negeri Makassar	Media Card For Anticorruption Learning On The Subject PkN (Pendidikan Kewarganegaraan) In Junior High School
	Kamri Ahmad ¹ and Andi Arjuni K. Petta Lolo ²	Indonesia Muslim University, Makassar, Indonesia	The Influence Of Political System On Corruption
	Rusdiana Junaid ¹ , Rustan Santaria ²	¹ Universitas Cokroaminoto Palopo	An Excursion As A Great Medium Of Writing Process
15.30 – 16.00	Ahmad	Universitas Negeri Makassar	Urgency Of Spiritual Therapy In Developing Quality Of Soul And Character Of Students At SMAN Makassar
	Umar	STISIP Muhammadiyah Sinjai	The Determinant Factors Toward The Effectiveness Of Supervision Function Of Local Parliament (DPRD) In Sinjai Regency
	Hariratul Jannah ¹⁾ , and Muammar Hasbullah ²⁾	Faculty of Letters, Universitas Muslim Indonesia	“Aru” As Traditional Poetry In Makassar The Study Of Stylistic
	Mahmudah	Universitas Negeri Makassar	Scientifics Markers In Academic Text
16.00 – 16.30	Fatoni ¹ , Cahyo Yuwono ² , Mohamad Annas ³	¹²³ Faculty of Sport Science, Semarang State University	Understanding Soccer Players Of The Laws Of The Game 2010/2011
	Syamsuddin Maldun	Universitas Bosowa	Prospects For Public Private Partnership Infrastructure In South Sulawesi Province
	H. Joko Tri Brata ¹⁾ , La Ode Bariun ²⁾ , and Asri Djauhar ³⁾	Sulawesi Tenggara University	Model Poverty Based Collaboration
	Najmi Kamariah ¹ , Maryati Ismaili ² ,	¹ Sekolah Tinggi Ilmu Administrasi Negara (STIA LAN)	An Integration of Servqual Method and Quality Function



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TIME	SPEAKERS	INSTITUTION	PAPER
	Abd. Rahman Kadir ² , and Noer Bahri Noer ²	Makassar ² Universitas Hasanuddin	
16.30 – 17.00	Muhammad Jufri	Psychologi Faculty, Universitas Negeri Makassar	Talent Management: Toward Optimal Quality Of Human Resources
	Yusriadi Hala	STIE – YPUP	The Effectiveness of The Intensification and Extensification Strategy To Increase The Revenue Of Makassar City
	Sunardi	Universitas Negeri Makassar	Environmental Conservation Through Waste Management Of Car Repair Shop In Makassar City
	Moh. Ahsan S. Mandra	Universitas Negeri Makassar	Analysis Of Learning Assessment In Physics At Automotive Engineering Education Study Program State University Of Makassar



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THE SCHEDULE OF INTERNATIONAL CONFERENCE - PARALLEL SESSION -

Ruang : Ball Room 3 Lt.2
Moderator : Dr. Hendra Jaya, M.T

TIME	SPEAKERS	INSTITUTION	PAPER
15.00 – 15.30	Risa Bernadip Umar ¹ , Munawar ² , Natsir Thamrin ³	Fakultas Teknik Universitas Pejuang Republik Indonesia	Effect Of Heat Treatment On The Mechanical Properties Of Steel S45c Welding Process With Smaw (Shielded Metal Arc Welding)
	Andi Ilham Samanlangii ¹) Adi Tonggih ²) and Moh.Khairid Noor ³)	^{1,3}) Mining Engineering Department, Universitas Pejuang Republik Indonesia (UPRI) ² Geologi Department, Universitas Hasanuddin	Prospecting Iron Ore In Sabussalam Region Calendar In City Subulussalam, Aceh
	Heri Suryaman ¹), Kusnan ²), Suparji ³), and Supari Muslim ⁴)	^{1,2,3}) Civil engineering, faculty of technique, surabaya state of university ⁴) Electrical Engineering, faculty of technique, surabaya state of university	Developing KKNi Based Teaching Administration And The Problem Solving In Order To Increase The Learning Outcomes Of Students In Beam Structure-I Class, Civil Engineering, State University Of Surabaya
	Kusnan ¹), and Agus Wiyono ²)	Civil engineering, faculty of technique, surabaya state of university	Development Of Flood Countermeasures Model In Campus Of Ketintang UNESA Surabaya
15.30 – 16.00	Agus Budi Santosa	Electrical Department, of State University of Surabaya	The Development Of Learning Media To Improve The Results Of The Study Of Data Communication In Industrial Electronics Engineering Department At SMKN 1 Jetis Mojokerto
	Syamsidah	Faculty of Engineering, Universitas Negeri Makassar	Employer Relationship Patterns And Housemaids
	Hasanah ¹ ; Muh. Nasir Malik ² ; Elfira Makmur ³ ;	Faculty of Engineering , Universitas Negeri Makassar	Model Integration Of Discovery Learning With Contextual Teaching And Learning (DI-CTL MODEL) To Improve The Quality Of Learning In Vocational High School
	Sapto Haryoko ¹ , Hendra Jaya ²	Universitas Negeri Makassar	Alignment of Supply and Demand workforce Vocational School Graduates On Industry
16.00 – 16.30	Yasser A. Djawad ¹ , Sutarsi Suhaeb ²	Universitas Negeri Makassar	Role of Information Technology in Health Sector in Improving Health Care
	Muhammad Yahya	Universitas Negeri Makassar	Empowerment Of Dropout Students School By Training Of Servicing Motorcycle



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TIME	SPEAKERS	INSTITUTION	PAPER
	Muliaty	Creative Media State Polytechnic Makassar	The Design Of Tour Guide Application Based On Android
	Abdul Muis Mappalotteng ¹ , Fathahillah ² , Pattasang ³	Technology and Vocational Education, Postgraduate, State University of Makassar	The Effectiveness Of Using Plc Trainer Panel System In The Practice Learning Of Operating Electromagnetic Control System In Vocational High School
16.30 – 17.00	Umamiati Rahmah	Universitas Negeri Makassar	Theatrical Mini Development Character Early Age Child at TK Melati UNM
	Muhammad Saleh ¹ and Mayong Maman ²	Universitas Negeri Makassar	Politeness Strategy Of Students' Speaking Skill In Learning Interaction
	Muhammad Basri D ¹ , Andi Tenri Ampa ² , and Sitti Halijah ³	¹ Department of English, Faculty of Letters, UMI Makassar, ² Department of English Education, Faculty of Teachers Training and Education, Unismuh Makassar, ³ Department of English Education, Faculty of Letters, UMI Makassar,	The Specified Patterns Of Noun Phrases Used By The Fourth Semester Students In Their Paragraphs
	Mahmud Mustafa	Universitas Negeri Makassar	Material Development Teaches Digital Electronic Gets Multimedia's Basis At Tech Education Majors Unm's Electronics



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**THE SCHEDULE OF INTERNATIONAL CONFERENCE
- PARALLEL SESSION -**

Ruang : P3G Ruang I Lt.3
Moderator : Zainal Abidin, SE., M.Si.

TIME	SPEAKERS	INSTITUTION	PAPER
15.00 – 15.30	Purnamawati ¹ , Hasanah ² , Nuridayanti ³	Fakultas Teknik, Universitas Negeri Makassar	The Implementation Of Problem Posing Learning Model Of Subject Electrical Engineering
	Muhammad Ilham Bakhtiar ¹ , Sinta Nurul Oktaviana K. ²	1STKIP Andi Matappa.Pangkep	Cognitive Restructuring Application Techniques To Reduce Student Behavior In Academic Procrastination
	St. Asriati AM.	Fakultas Keguruan dan Ilmu Pendidikan, Universitas Muhammadiyah Makassar	The Use Of Predict-Explain-Observe-Explain In Improving The Students’ Speaking Ability At The Eleventh Year Of SMA Batara Gowa (An Experimental)
	Musripah ¹ , Ismet Basuki ² , Euis Ismayati ³ , and Supari Muslim ⁴	¹)SMKN 2 Boyolangu Tulungagung ^{2),3)} and ⁴⁾ Postgraduate Program of State University of Surabaya	The Effect Of Learning Styles And Learning Model Of Students Competence Subject Basic Design At State Vocational High School 2 Boyolangu
15.30 – 16.00	Mubasir ¹ , Muchlas Samani ² , Mochamad Cholik ³ , and Supari Muslim ⁴	¹)SMK Al- Huda Kediri ²⁾³⁾ and ⁴⁾ Postgraduate Program of State University of Surabaya	The Development Of Motorcycle Trainer Starting System Learning Media To Improve Students’ Learning Outcomes In Starting System Repairment Competence
	Jahja Nawawi ¹ , Muclas Samani ² , Ekohariadi ³ , and Fendi Achmad ⁴	¹)SMK PGRI 4 Kediri ^{2),3)} and ⁴⁾ Postgraduate Program of State University of Surabaya	The Effect Of Cooperative Learning Model Jigsaw Ii Toward The Students Learning Outcome Electric Light Vehicle Maintenance At State Vocational High School PGRI 4 Kediri
	Hendro ¹ , Muchklas Samani ² , Wayan Susila ³ , and Fandi Achmad ⁴	¹)SMK Al Huda Kediri ²⁾³⁾ and ⁴⁾ Postgraduate Program of State University of Surabaya	The Development Trainer Media Car Audio Systems To Improve Learning Outcomes Audio System Maintains Competency Skills In State Vocational High School Al Huda Kediri
	Sutikno ¹ , Supari Muslim ² Bambang Suprianto ³	¹)SMK Kediri ²⁾ and ³⁾ Postgraduate Program of State University of Surabaya	The Relationships Among Map Concept Learning Strategies, Lathe Practicum Learning Facilities, Teaching Skills, And Student Learning Outcome Of Grade XI Mechanical Engineering Of All Vocational Senior High Schools Kediri
16.00 – 16.30	Joko Sukariono ¹ , Supari Muslim ² , and Munoto ³	¹) SMK Al Huda Kediri ²⁾ and ³⁾ Postgraduate Program of State University of Surabaya	The Effect Of Intellegent Quotient Level And Learning Media Of Automatic Transmission Service Subject Outcome Of Student At Xii Motorcycle Engineering Smk Al Huda Kediri
	Munirah ¹ and Rahmah A. ²	Prodi Magister Pendidikan Bahasa dan Sastra Indonesia	The Real Things Media In Writing Description Learning Of Student Grade X ₁ MAN Pangkep



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TIME	SPEAKERS	INSTITUTION	PAPER
	Muhammad Yusri Bachtiar ^{1*} , Muhammad Akil Musi ² , Syamsuardi ³	^{1,2,3} Prodi PG-PAUD Fakultas Ilmu Pendidikan Universitas Negeri Makassar	Developing Project Based Learning Method Using Media Recycling Waste At Group B Islamic Integrated Kindergarten Wihdatul Ummah Makassar
	Misykat Malik Ibrahim ¹ , Muhammad Amri ²	Tarbiyah and Teaching Faculty (FTK), Alauddin State Islamic University	The Evaluation Of Biology Education Study Program Of Tarbiyah And Teaching Faculty Of UIN Alauddin Makassar
16.30 – 17.00	Elidasari	STEI Triandra	The Effect Of Inquiry Learning Model To Student Having Field Independent Cognitive Style Toward Writing Skill Of Business Letter
	Ridwan ¹ , Yansar ² , and Dedi Kusnadi ³	Faculty of Teacher Training and Education, Borneo Tarakan University	The Analysis Of Curriculum 2013 Textbooks For The Fourth Grade Students Viewed From The Aspect Of Content Feasibility
	Hikmawati Usman	Fakultas Ilmu Pendidikan Universitas Negeri Makassar	The Effect Of Using Audio Visual Media To Learning Outcomes Of Art, Culture And Skills Of Grade IV SD Negeri Mannuruki Tamalate District, Makassar City
	Ramly	Fakultas Bahasa dan Sastra Universitas Negeri Makassar	The Discrepancy Between Teaching Plan And Its Implementation
17.00 – 17.30	Riana T. Mangesa ¹⁾ , and Anas Arfandi ²⁾	^{1,2)} Faculty of Engineering - Universitas Negeri Makassar	Review Of Implementation Values Of Character In The Subject On Vocational Education
	Muhammad Guntur	Study Program of Public Administration, Faculty of Social Sciences, State University of Makassar, South Sulawesi, Indonesia	Implementation Of Good Governance Principles On Transparency, Accountability And Participation Community In Indonesia



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- PARALLEL SESSION -**

Ruang : P3G Ruang 2 Lt. 2
Moderator : Faisal Najamuddin, S.Pd., M.Eng.

TIME	SPEAKERS	INSTITUTION	PAPER
15.00 – 15.30	Andi Paida	Program Studi Pendidikan Bahasa dan Sastra Indonesia	Effectiveness Of Application Technique Sentence Stock Exchange In Lesson Setting Paragraph Narrative Class X SMK Gunung Sari 1 Makassar
	Nahindi Putra Gitama ¹⁾ , LuhWinaSadevi ²⁾ , Supari Muslim ³⁾ , and BambangSuprianto ⁴⁾	^{1,2)} Magister of Engineering and Vocational Education, Post Graduate State University of Surabaya, ^{3,4)} Professor of Engineering and Vocational Education, Post Graduate University of Surabaya,	Comparison Of The Learning Outcomes Of Courslab 2.4 And Power Point Media In PLC Course
	Syamsiarna Nappu ¹⁾ , and Evi Angraeni ²⁾	Universitas Muhammadiyah Makassar	Improving Students' Vocabulary Through Jigsaw Technique
	Herman H ¹⁾ , and Hasruddin ²⁾	Faculty of Sport Science, Universitas Negeri Makassar	Analysis Of Motivation Of Students Exercise Basketball SMAN 2 Polongbangkeng North District Takalar
15.30 – 16.00	Endang Ayu Patrianingsih ¹⁾ , Ernawati S K ²⁾ , and Nurhayati B ³⁾	^{1,2,3)} Post Graduate State University Of Makassar	The Influence Of Discovery Learning Model Toward The Comprehension Of Biology Concept And Scientific Attitude Of Students At SMAN 3 Takalar
	Joko	Faculty of Engineering Unesa Surabaya	Development Learning Tool Problem Based Learning Model Direct Current Machines Lesson
	Wahyu Prima Agus ¹⁾ , Achmad Munandar ²⁾ , Bambang Supriatno ³⁾	Universitas Pendidikan Indonesia	Reasoning Analysis Of Junior High School Students Around The Settlement Of Indigenous Baduy In Response Environmental Issues
	Muhammad Khalifah Mustami	Biology Education Department, Teaching and Science Faculty, State Islamic University of Alauddin Makassar	Information Reception And Attitude Of Environmental Awareness On Secondary School Students
16.00 – 16.30	Ratna Dewi ¹⁾ , Erwin Udding ²⁾	^{1, 2)} Muhammadiyah University of Makassar	University Students' Errors In Using Elliptical Constructions



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TIME	SPEAKERS	INSTITUTION	PAPER
	Akbar Iskandar ¹ , Muhammad Rizal ²	¹ STMIK AKBA	Item Quality Analysis Instrument In The College Entrance Test In The View Of The Expert Validator
	Mislia	UPRI	An Implementation Of Character Education In Scout Extracurricular Activity At SMPN 1 Maros
	Darlan Sidik	Universitas Negeri Makassar	Application Of ICT For Distance Learning In Cooperation Program Of State University Of Makassar
16.30 – 17.00	Farida Aryani ¹ , Abdullah Sinring ² , Muh. Rais ³	Universitas Negeri Makassar	Conseling Guidance Services Using SIMPESA (Sistem Aplikasi Peminatan Siswa)
	Muhammad Jafar	Universitas Negeri Makassar	Professional Competence Development Of English Teachers In Indonesian Junior High School
	Bakharani Rauf	Universitas Negeri Makassar	Analisis Of Motivation And Interest Of Secondary High School Students To Continue The Study In Vocational High School
	Abd. Halim	Universitas Negeri Makassar	A Motivational Study On Learning English In The Extended Learning Program
17.00 – 17.30	Syamsiah D.	Universitas Negeri Makassar	Integrated Cooperative Model Application Reading Composition (CIRC) To Improve Understanding Learning Outcomes Of Reading Class V SD Negeri Sudirman II Makassar
	Umi Farida	Universitas Negeri Makassar	The Challenges Of Higher Education In Asean Economic Community (Aec)
	Eko Wagiyanto	Universitas Negeri Makassar	Policy Analysis On Prevention Of Child Dropout Of School Case Study: Movement Back To School In Mamuju
	Amirullah Abduh ¹⁾ and Rosmaladewi ²⁾	¹⁾ Universitas Negeri Makassar, Indonesia ²⁾ Politeknik Pertanian Negeri Pangkep, Indonesia	English Language Teaching In An Indonesian Primary School: Teachers' Perspectives

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APPLICATION OF PROBLEM-POSING LEARNING MODEL ON ELECTRICAL ENGINEERING SUBJECT IN SMK 2 MAKASSAR

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ABSTRACT

The purpose of this study was to determine: (1) how high is the learning motivation of student with the application of problem posing learning model, (2) how big is the learning outcomes of students with problem posing learning model application, (3) the effect of the application of problem posing learning model on motivation of students, (4) the effect of the application of problem posing learning models on the learning outcomes of students. This type of research using a quasi-experimental, with research subjects consist of 54 students. Data were collected through questionnaires and achievement test and analysed using t-test. The results of this study indicate that: (1) The motivation study of students with learning model application 'problem-posing' higher than conventional learning models. (2) The results of student learning with learning model application problem posing better than conventional learning models. (3) There is the effect of the application of problem posing learning models to motivate student learning. (4) There is the effect of the application of problems posing learning models to the learning outcomes of students.

Keywords: *learning outcomes, learning motivation, problem posing*

INTRODUCTION

Improving the quality of Human Resources (HR) is the right solution that must be done so that Indonesia able to keep pace with technological developments. Implementation of education following the developments and changes in life became one of the requirements to continue to compete with other countries. Law No. 20/2003 on National Education System states that the national education system must be able to guarantee the equalization of educational opportunities, improving quality and the relevance and efficiency of education management to meet the challenges in accordance with the demands for changes in local, national, and global so it is necessary to reform the education in a planned manner, effective, and sustainable.

The quality of vocational school graduates which have the skills and able to compete in the global competition must be obtained from the implementation of

learning in schools that follow the development of science and technology. Permendikbud No. 70 of 2013 explains that: required the improvement of mindset in education in Indonesia. This mindset is, among others: (1) the pattern of the teacher-centered learning process, become a learner-centered learning process, (2) individual learning patterns, becomes a pattern, of group learning, and (3) the pattern of passive learning become critical learning patterns.

However, in the learning process that generally occurs in the classroom is, imparting knowledge regardless of what the actual needs of the learners. Teachers play an active role as a teacher-centered. The level of activeness of learners in the learning process is considerably less, thereby inhibiting the growth of creativity and learning motivation. The mindset of learning yet to occur, so that learners tend to expect information from the teacher,

without trying to dig deeper, the knowledge within themselves.

A change of mindset in the learning has not happened yet, so that learners tend to only expect information from the teacher without trying to dig into, the knowledge that is within them. Djojonegoro (1998) stated that vocational education will be efficient if the teaching methods used, and personal relationships with learners, considering the traits and nature of such learners. This suggests that implementation of learning in schools require teachers to act as a facilitator able to apply the learning model in accordance with the conditions of students and their environment.

Based on the results of the initial survey which conducted to obtain information that the study of students subjects of Electrical Engineering odd semester of 2015/2016 academic year is still low. Recapitulation of the average learning outcomes of students, for class X Electronics Industries, and Audio Video gained an average of 54 with a standard value completeness is 75 and only 38% of students who reached complete value. The observed lack of learning motivation, with learners who do not play an active role in the learning process. Such information, to be considered in choosing a model of learning that can improve motivation and learning outcomes of students. One form of the learning process which oriented towards a broader understanding, ie learning by the problem-posing approach.

Problem posing learning model was developed in 1998 by Lyn D. English, and at the very beginning is applied in mathematics and science (Astra, 2012). According to Sutiarmo in Setiawan, et al (2012) problem posing is a term in the English language, as the equivalent he said, used the term 'to formulate the problem' (question) or create problems (question). Problem posing by Brown and Walter in Upu (2003) consists of two aspects, namely accepting and challenging.

Meanwhile, Silver (1994); Akay & Boz (2010); Mishra & Iyer (2015) states that problem posing is an activity that occurs when students are involved in formulating the given problem, and also when creating new problems or questions. The Making of a question or granting the problem, aims to explore the specific situation and to find new solutions in the process.

This study uses a problem posing approach with the pre-solution type of posing. In this type students create questions and answers based on the statement given by the teacher. The statement in question was made by teachers, while students create their own questions and answers based on the statement. In the process of creating a question, learners are expected to utilize a variety of resources such as textbooks, modules and the internet.

Their task of submission of questions (problem posing) causes the formation of a more solid understanding of the concept of the self-learners of the material that has been granted. Therefore, students are more interested and challenged independent study or conduct discussions with his friend, so that information is processed in the mind and once it is understood that students can ask questions. Activities that make students more confident, active and creative in shaping the knowledge and ultimately students understanding of the concept of learning materials, become much better.

Based on these descriptions, the researchers tried to apply a model-oriented learning on student-centered, namely the problem-posing approach which expected to improve motivation and learning outcomes of students.

RESEARCH METHOD

This study uses Non-equivalent Control Group Design, involving two groups: an experimental group and a control group that aims to determine the effect of applying problem posing

approach on motivation and learning outcomes of Electrical Engineering students of class X, Study Program of Expertise Electronics Engineering at SMK Negeri 2 Makassar.

The data collection is done by using a test for learning outcomes data, and a questionnaire for data of learning motivation from the students. Data analysis was performed using t-test with a significance value of 0,05.

RESEARCH RESULT

Assessment validity of the learning process conducted by two experts and analyzed descriptively. Validation that is performed covers all aspects and criteria of each instrument. Results of the assessment of the validation of learning process showed an average value of 3,49 with the valid criterion, so that the instrument can be used for research.

The results of the analysis of the motivation of learners in both classes which given different treatment shows that, the class, that is using a problem posing learning models, earned an average of greater learning motivation compared to the conventional learning.

however with the different percentages of each category. Value category of 'medium' on an experimental class as much as 1 (4%) and in the control class as many as 11 people (42%). For high category in the experimental class as many as 8 people (29%) and control classes as many as 11 people (42%). A number of students who earn very high category in the experimental class as many as 19 people (68%), while the control class as many as 4 people (15%).

The data shows that there are differences in the motivation of learners who are taught using problem posing learning model with learners that are taught without using model problem posing. Learners who achieve very high motivation categories as many as 19 people with a percentage of 68% in the experimental class taught using problem posing learning models. As for the control class that is taught without using model problem posing only 4 learners achieve very high category with the percentage of 15%. When it viewed from the average value, the experimental class are at very high category with a score of 121. While the control class at the high category. It is clear that there is the effect of the application of learning model problem posing in increasing the motivation of learners.

Data analysis for the pre-test results shows the distribution of values in the experimental class and control class that are in the poor category. These results indicate that in the experimental class and control class has the same starting capabilities on the subjects of Electrical Engineering, the material of electrochemical cells and transformer.

The value of learning outcomes, from the experimental class for the excellent category as many as eight people (29%) and control class 4 (15%). Categorized good as many as 16 people (57%) in experimental class and 13 people (50%) in control class. And categorized as

Table 1. Frequency and categorize score of student motivation in learning

Category	Class Experiments		Class Control	
	Freq	%	Freq	%
Very high	19	68	4	15
High	8	29	11	42
Moderate	1	4	11	42
Low	0	0	0	0
Very low	0	0	0	0
Amount	28	100	26	100

Based on Table 1. The distribution of the value of learning motivation of students is in the category of the medium, high and very high. The data shows the distribution of the same category, between an experimental class with a control class,

Fair as many as 4 students in the experimental class, or by 14%. The number of learners who acquire Fair value category up to 9 people (35%) in control class. The data have illustrated that there is a significant difference in learning outcomes between experimental class and control class.

Determination of thoroughness of students in each subject based in Complete Standard Minimum (KKM) set by the school. The KKM for subjects C2 and C3 is 75. Electrical Engineering subjects are subject the Basic Competency Study (DKK) and are included in the category of subject C2 therefore KKM used was 75. The results of the analysis of thoroughness the student, in the post-test results for the experimental class and control class with the KKM 75 can be seen in Table 2 below.

Table 2. Analysis of completeness learning outcomes of students subjects electrical engineering experiment for class and class controls

Value	Category	Class Experiments		Class Controls	
		Freq	%	Freq	%
75-100	Complete	22	79	15	58
0-74	Not complete	6	21	11	42
Amount		28	100	26	100

The data in Table 2 shows in the experimental class there are 6 students who did not complete or by 21%. As for the control class there are 11 students who did not complete or by 42%. This shows that the study of students in the experimental class is higher compared to the control class.

Test-normality of the data is calculated using a Kolmogorov-Smirnov test. Normality test analysis results are shown in Table 3.

Table 3 Data normality test motivation and learning outcomes of students in the experimental class and control class

α	Normality test	Class Experiments			Class Controls		
		questionnaire	pretest	Posttest	questionnaire	pretest	Posttest
0,05	Kolmogorov-Smirnov Asymp. Sig (2 tailed) > 0,05	0,062	0,064	0,117	0,200	0,200	0,056
Conclusion		normal distribution of data			normal distribution of data		

Table 4. The Results Of The Analysis Of Homogeneity Test

α	homogeneity test	significance level	Conclusion
0,05	Motivation	0,052	Homogeneity
	Pretest	0,571	Homogeneity
	Postets	0,286	Homogeneity

The results of the normality test showed that the data were normally distributed with the significance $> 0,05$. While the homogeneity test data is intended to test whether the data obtained homogeneously or not. Data is said to be homogeneous if the level of significance is $\geq 0,05$. Test-homogeneity can be presented in Table 4.

Table 5. Hypothesis test results motivation of learners in the experimental class and control class

α	Class	N	Mean	t_h	t_c	Sig.
0,05	experiment	28	121	5,544	2,006	0,000
	control	26	104			

The results of t-test analysis showed that the $t_h = 5,544$ with the 0,000 significance. This shows H_0 rejected, which means an average score of learning motivation of learners in the experimental class exceeds the control class. These results indicate that there is the effect of the application of problem posing learning model, against the learning motivation of learners. Furthermore, after the data proved to be normal and homogeneous, then the t-test performed on the outcome of a pre-test to determine the initial ability of students in the experimental class and control class.

Table 6. Hypothesis test results ability early of learners in the experimental class and control class

α	Class	N	Mean	t_h	t_c	Sig.
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0,05	experiment	28	16,57	-0,546	2,006	0,588
	control	26	17,69			

The results of t-test analysis are presented in Table 6. The table shows the results of Sig. (2-tailed) is 0,588, which means greater than 0.05 and t-test results showed value minus (-) which means that much smaller than t table, which means that H0 is accepted. This indicates that the initial ability of students in the experimental class and control class in Electrical Engineering subject are the same, so that both classes worthy to be compared.

Table 7. Hypothesis test learning outcomes early of learners in the experimental class and control class

α	Class	N	Mean	t_h	t_t	Sig.
0,05	experiment	28	79,68	2,110	2,006	0,040
	control	26	74,96			

The results of t-test analysis of students after obtaining a different treatment in the delivery of material (the post-test) can be seen in Table 7. The table shows th value of 2,110 with the 0,040 significance. The significant value that indicates 0,040, less than 0,05 hence H0 stating that there was no difference in learning outcomes of Electrical Engineering from students who is taught by problem posing learning model, with learners who are taught without using model problem posing. is rejected. It can also be seen from the difference in the average value obtained by students in the experimental class for 79,68 more than the average obtained by students in the control class, which amounted to 74,96.

The above data shows the value of th is positive and more than tt so that H0 is rejected and H1 accepted, so that is concluded that there are differences in the application of problem-posing learning models on learning outcomes of students. Results of the analysis showed that there was a significant effect of the application of problem posing learning model to an increase in learning outcomes of students

in the subject of Electrical Engineering at SMK Negeri 2 Makassar.

DISCUSSION

Problem posing learning is learning that requires students to be active in the learning process. Learners are required to be able to formulate or create questions independently, and then answer it based on material that has been given. This learning model begins with providing materials and initial information to the learners. Based on the material students were asked to create and formulate a question. In making the question, learners are given the opportunity to read and gather information from a variety of sources.

Results of the application of problem-posing learning models causing students to be actively looking for information, in order to add a reference to their knowledge, and assist in making and answering the questions. This has affected the improvement of learning motivation of students in the experimental class. Increased motivation can be seen from the distribution of the categorization of the average value of learner motivation, and the hypothesis test result greater than control class.

The involvement of students in learning by applying problem posing learning model is one indicator of the effectiveness of the learning process. Learners not only receive materials from the teacher but of students also tried to explore and develop independently. So that the learning outcomes of students in the experimental class are higher than control class. It can be viewed from the distribution of the value of learning outcomes of students.

Value distribution and categorization indicate that the implementation of learning in the experimental class is better in improving the learning outcomes of students of the control class. This occurs because conventional teaching practices lead to the boredom resulting in the ability

of learners to capture the contents of the material presented by the teacher becomes slow and less accessible on the learner. So that students in learning implementation were not actively involved.

Differences in the distribution of categorization and the average value of post-test learning outcomes of the student, for the experimental class taught by the application of problem posing learning models are in the category of Fair, good, and excellent. The data showed an increase in student learning outcomes significantly in the experimental class, so it can be said that problem posing approach, have a good effect on the learning outcomes of students in the subject of Electrical Engineering.

Differences in learning motivation of students taught by problem posing learning model, with the conventional learning model can be seen from the difference in the average obtained from these two classes. Thus, it was concluded that there was an effect of the application of problem-posing learning model on the motivation of student learning.

These results are consistent with research conducted by Astra, et al. (2012) which states that problem posing learning models increased the activity of students in learning activities. With the application of the model problem posing students encouraged to make a maximum effort and enthusiasm in working on practice questions of physics, which is given so as to improve the learning outcomes of students. The same study conducted by Wulandari (2013) which states that application of learning models problem posing can increase learning motivation of students characterized by increased activity and learning outcomes in learning.

Effect of problem posing learning models on the learning outcomes of students after being applied to the experimental class, and the application of conventional learning in the class control, it can be seen real differences of learning outcomes obtained in both classes.

The implementation of different treatment in submitting and presenting the material to learners, which is in the experimental class students make and answer the question itself, not as a test, but as a model of learning in order to make students active in the learning process. The demand to create the questions and at the same time make the answer, making students active in seeking a variety of sources and references to meet the demands of the learning. So that learner is motivated by their opinions and ideas, so that teachers are less able to analyze the difficulties of students to absorb the subject matter. This shows that the problem formulation at the fourth order, in this study have been answered, that there is an effect of the application of problem-posing learning model on learning outcomes of students.

The results are consistent with the research conducted by Irawati (2014) found that the problem posing models, can be more effective to improve learning outcomes and the understanding of high-level learning outcomes of students compared to the problem-solving. Syamsi & Hariyadi (2012), which implementing SSCS strategy, on learning problem posing in his research found that learning outcomes of students are significantly better than using conventional learning models. Similarly, problem posing effect on the ability to think creatively and learning outcomes (Hafsanuddin, et al 2014) which found that the interaction of students in the posing problem learning model able to affect the ability to think creatively and learning outcomes of students.

Based on the description above it can be seen that the use of problem posing learning model, giving effect to the motivation and learning outcomes of students. However, in practice there are some obstacles and constraints encountered. The obstacles which include the time required by learners is very long,

in an effort to make and answer the question, in accordance with a given task. Such a long period of time which is needed by learners is because they need more time to understand the material before making the questions and answer them.

In addition, questions prepared by students, is less systematic and limited to the mastery of the language by learners and sometimes that emerged was not a question but a statement. Another obstacle that arises is, the likelihood of the same questions made by learners. However, the implementation of learning with the use of problem posing attract enough learners in the learning process.

These results provide feedback to teachers in order to provide an alternative model of learning for learners to overcome the boredom of learning that may be experienced while continuing to use the same teaching methods. As expressed by Siregar & Nara (2014) that the dynamics the learning process will greatly affect the learning motivation of student learning. By conducting variation in learning activities, expected that the learning process can be more meaningful and more optimal.

CONCLUSION

1. Learning Motivation of student with the application of learning models problem posing achieve very high category.
2. Student learning outcomes with the application of learning models problem posing achieve very good category.
3. There is an effect of the application of learning models problem posing on the motivation of student learning.
4. There is an effect of application of learning models problem posing to the study outcomes of students.

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