

ISBN: 978-602-60736-1-7

# PROCEEDING



**INTERNATIONAL CONFERENCE ADRI - 5**

## **Scientific Publications Toward Global Competitive Higher Education**

Ballroom Theater - Pinisi Tower 3<sup>rd</sup> Floor  
Universitas Negeri Makassar  
21- 22 January 2017



**INTERNATIONAL CONFERENCE ADRI - 5**

**“Scientific Publications toward Global Competitive Higher Education”**

**PROCEEDING**

**INTERNATIONAL CONFERENCE ADRI - 5**

**“Scientific Publications toward Global Competitive Higher Education”**

**Publishing Institute  
DPD ADRI SULSEL**

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**Address**  
Universitas Negeri Makassar

**ISBN: 978-602-60736-1-7**  
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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 - 3<sup>rd</sup> 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.	<b><u>Moderator:</u></b> 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)	<b><u>Moderator:</u></b> 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 <sup>1</sup> , Andi Ilham Samanlangi <sup>2</sup> , La Ode Muh. Yazid Amsah <sup>3</sup>	<sup>1,2,3</sup> Jurusan Teknik Pertambangan Fakultas Teknik Univrsitas Pejuang Republik Indonesia	Groundwater Modelling To Predict Flow And Negative Impacts Of Groundwater Abstraction
	Ritnawati <sup>1</sup> , Enny Tri Mahyuni <sup>2</sup> , Andi Amrullah <sup>3</sup>	<sup>1</sup> 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 <sup>1</sup> ), Sri Mulyani <sup>2</sup> ), Ida Suryani <sup>3</sup> ), and Muh.Hatta <sup>4</sup> )	<sup>1</sup> Faculty Fishery Cokroaminoto Makassar University, <sup>2</sup> Faculty Fishery Bosowa University <sup>3</sup> Faculty Agronomy Cokroaminoto Makassar University, <sup>4</sup> Faculty Marine Science and Fishery Hasanuddin University	Model And Simulation Of Relationship Tropodinamik Waters Of Lake Tempe, Wajo Disctrit.
	Slamet Widodo <sup>1</sup> , Saifuddin Sirajudin <sup>2</sup>	<sup>1</sup> Universitas Negeri Makassar <sup>2</sup> 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 <sup>1</sup> , Herlinda Haruna <sup>2</sup> , Fatma Hiola <sup>3</sup> , Muhammad Wijaya <sup>4</sup> , Hamka L <sup>5</sup>	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 <sup>1</sup> , Sukardi <sup>2</sup> , Hasir <sup>3</sup> , Agus Erwin Ashari <sup>4</sup>	<sup>1</sup> Health Polytechnic of Mamuju <sup>2</sup> 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



## INTERNATIONAL CONFERENCE ADRI - 5

### “Scientific Publications toward Global Competitive Higher Education”

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 <sup>1</sup> , Napirah <sup>2</sup> , and S. Wanci <sup>3</sup>	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 <sup>1</sup> , Ratnasari Iskandar <sup>2</sup> , and Ririn Eka Puspitasari S. <sup>3</sup>	<sup>123</sup> STIKES Mega Buana Palopo	Factors That Related With The Elderly Activeness In The Utilization Of The Elderly Posyandu
17.00 – 17.30	Musbir <sup>1</sup> , Sudirman <sup>2</sup> , and Ridwan Bohari <sup>3</sup>	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 <sup>1</sup> and Aan Aswari <sup>2</sup>	<sup>1</sup> Law Faculty Universitas Tompotika Luwuk <sup>2</sup> 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 <sup>1</sup> and Andi Arjuni K. Petta Lolo <sup>2</sup>	Indonesia Muslim University, Makassar, Indonesia	The Influence Of Political System On Corruption
	Rusdiana Junaid <sup>1</sup> , Rustan Santaria <sup>2</sup>	<sup>1</sup> 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 <sup>1</sup> , and Muammar Hasbullah <sup>2</sup>	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 <sup>1</sup> , Cahyo Yuwono <sup>2</sup> , Mohamad Annas <sup>3</sup>	<sup>123</sup> 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 <sup>1</sup> , La Ode Bariun <sup>2</sup> , and Asri Djauhar <sup>3</sup>	Sulawesi Tenggara University	Model Poverty Based Collaboration
	Najmi Kamariah <sup>1</sup> , Maryati Ismaili <sup>2</sup> ,	<sup>1</sup> Sekolah Tinggi Ilmu Administrasi Negara (STIA LAN)	An Integration of Servqual Method and Quality Function





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<b>TIME</b>	<b>SPEAKERS</b>	<b>INSTITUTION</b>	<b>PAPER</b>
	Abd. Rahman Kadir <sup>2</sup> , and Noer Bahri Noer <sup>2</sup>	Makassar <sup>2</sup> 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 <sup>1</sup> , Munawar <sup>2</sup> , Natsir Thamrin <sup>3</sup>	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 <sup>1)</sup> Adi Tonggih <sup>2)</sup> and Moh.Khairid Noor <sup>3)</sup>	<sup>1,3)</sup> Mining Engineering Department, Universitas Pejuang Republik Indonesia (UPRI) <sup>2</sup> Geologi Department, Universitas Hasanuddin	Prospecting Iron Ore In Sabussalam Region Calendar In City Subulussalam, Aceh
	Heri Suryaman <sup>1)</sup> , Kusnan <sup>2)</sup> , Suparji <sup>3)</sup> , and Supari Muslim <sup>4)</sup>	<sup>1,2,3)</sup> Civil engineering, faculty of technique, surabaya state of university <sup>4)</sup> 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 <sup>1)</sup> , and Agus Wiyono <sup>2)</sup>	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 <sup>1</sup> ; Muh. Nasir Malik <sup>2</sup> ; Elfira Makmur <sup>3</sup> ;	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 <sup>1</sup> , Hendra Jaya <sup>2</sup>	Universitas Negeri Makassar	Alignment of Supply and Demand workforce Vocational School Graduates On Industry
16.00 – 16.30	Yasser A. Djawad <sup>1</sup> , Sutarsi Suhaeb <sup>2</sup>	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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<b>TIME</b>	<b>SPEAKERS</b>	<b>INSTITUTION</b>	<b>PAPER</b>
	Muliaty	Creative Media State Polytechnic Makassar	The Design Of Tour Guide Application Based On Android
	Abdul Muis Mappalotteng <sup>1</sup> , Fathahillah <sup>2</sup> , Pattasang <sup>3</sup>	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	Umami Rahmah	Universitas Negeri Makassar	Theatrical Mini Development Character Early Age Child at TK Melati UNM
	Muhammad Saleh <sup>1</sup> and Mayong Maman <sup>2</sup>	Universitas Negeri Makassar	Politeness Strategy Of Students' Speaking Skill In Learning Interaction
	Muhammad Basri D <sup>1</sup> , Andi Tenri Ampa <sup>2</sup> , and Sitti Halijah <sup>3</sup>	<sup>1</sup> Department of English, Faculty of Letters, UMI Makassar, <sup>2</sup> Department of English Education, Faculty of Teachers Training and Education, Unismuh Makassar, <sup>3</sup> 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 <sup>1</sup> , Hasanah <sup>2</sup> , Nuridayanti <sup>3</sup>	Fakultas Teknik, Universitas Negeri Makassar	The Implementation Of Problem Posing Learning Model Of Subject Electrical Engineering
	Muhammad Ilham Bakhtiar <sup>1</sup> , Sinta Nurul Oktaviana K. <sup>2</sup>	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 <sup>1</sup> , Ismet Basuki <sup>2</sup> , Euis Ismayati <sup>3</sup> , and Supari Muslim <sup>4</sup>	<sup>1</sup> )SMKN 2 Boyolangu Tulungagung <sup>2),3)</sup> and <sup>4)</sup> 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 <sup>1</sup> , Muchlas Samani <sup>2</sup> , Mochamad Cholik <sup>3</sup> , and Supari Muslim <sup>4</sup>	<sup>1</sup> )SMK Al- Huda Kediri <sup>2)3)</sup> and <sup>4)</sup> 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 <sup>1</sup> , Muclas Samani <sup>2</sup> , Ekohariadi <sup>3</sup> , and Fendi Achmad <sup>4</sup>	<sup>1</sup> )SMK PGRI 4 Kediri <sup>2),3)</sup> and <sup>4)</sup> 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 <sup>1</sup> , Muchklas Samani <sup>2</sup> , Wayan Susila <sup>3</sup> , and Fandi Achmad <sup>4</sup>	<sup>1</sup> )SMK Al Huda Kediri <sup>2)3)</sup> and <sup>4)</sup> 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 <sup>1</sup> , Supari Muslim <sup>2</sup> Bambang Suprianto <sup>3</sup>	<sup>1</sup> )SMK Kediri <sup>2)</sup> and <sup>3)</sup> 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 <sup>1</sup> , Supari Muslim <sup>2</sup> , and Munoto <sup>3</sup>	<sup>1</sup> ) SMK Al Huda Kediri <sup>2)</sup> and <sup>3)</sup> 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 <sup>1</sup> and Rahmah A. <sup>2</sup>	Prodi Magister Pendidikan Bahasa dan Sastra Indonesia	The Real Things Media In Writing Description Learning Of Student Grade X <sub>1</sub> MAN Pangkep



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TIME	SPEAKERS	INSTITUTION	PAPER
	Muhammad Yusri Bachtiar <sup>1*</sup> , Muhammad Akil Musi <sup>2</sup> , Syamsuardi <sup>3</sup>	<sup>1,2,3</sup> 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 <sup>1</sup> , Muhammad Amri <sup>2</sup>	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 <sup>1</sup> , Yansar <sup>2</sup> , and Dedi Kusnadi <sup>3</sup>	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 <sup>1)</sup> , and Anas Arfandi <sup>2)</sup>	<sup>1,2)</sup> 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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**THE SCHEDULE OF INTERNATIONAL CONFERENCE  
- 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 <sup>1)</sup> , LuhWinaSadevi <sup>2)</sup> , Supari Muslim <sup>3)</sup> , and BambangSuprianto <sup>4)</sup>	<sup>1,2)</sup> Magister of Engineering and Vocational Education, Post Graduate State University of Surabaya, <sup>3,4)</sup> 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 <sup>1)</sup> , and Evi Angraeni <sup>2)</sup>	Universitas Muhammadiyah Makassar	Improving Students' Vocabulary Through Jigsaw Technique
	Herman H <sup>1)</sup> , and Hasruddin <sup>2)</sup>	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 <sup>1)</sup> , Ernawati S K <sup>2)</sup> , and Nurhayati B <sup>3)</sup>	<sup>1,2,3)</sup> 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 <sup>1)</sup> , Achmad Munandar <sup>2)</sup> , Bambang Supriatno <sup>3)</sup>	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 <sup>1)</sup> , Erwin Udding <sup>2)</sup>	<sup>1, 2)</sup> Muhammadiyah University of Makassar	University Students' Errors In Using Elliptical Constructions



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TIME	SPEAKERS	INSTITUTION	PAPER
	Akbar Iskandar <sup>1</sup> , Muhammad Rizal <sup>2</sup>	<sup>1</sup> 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 <sup>1</sup> , Abdullah Siring <sup>2</sup> , Muh. Rais <sup>3</sup>	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
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## ENVIRONMENTAL CONSERVATION THROUGH WASTE MANAGEMENT OF CAR REPAIR SHOP IN MAKASSAR CITY

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### ABSTRACT

*This study aimed to determine: (1) description of car repair shop waste management at Makassar city, (2) barriers or constraints faced by the manager of the car repair shop in waste management, (3) waste management efforts made by the manager of auto repair shop, (4) the efforts made by the government in preserving the clean environment. The population is all auto repair shops in Makassar (112 units). Data collection techniques using documentation, observation, and interviews. The results showed that (1) most of the auto repair shop in Makassar not properly manage their waste (solid waste, liquid waste and waste gas or smoke), (2) the constraints faced by the manager of a car repair shop in managing and treating waste, include: knowledge, education and training on how to manage and treat waste auto repair, and the low awareness of people around the workshop on the importance of cleanliness of the environment, (3) the efforts made by the manager of a car repair shop in the management and processing of their waste include: providing a solid waste containment, making septic tanks to treat wastewater, drain waste water through pipe line, chimney installing, and maintain the cleanliness of the water or drainage channels, (4) the efforts made by the government in preserving the clean environment in form of: surveillance, monitoring, coaching, education, training, managing and treating waste, and threatened to shut down for a car repair shop manager who do not care about the cleanliness of the environment.*

**Keywords:** Car Repair, Waste Management, Environmental Preservation.

### INTRODUCTION.

Development is fundamentally change the circumstances that are considered unfavorable for the better. Balance environmental change towards a new equilibrium. The new equilibrium was intended as an attempt to achieve social justice on the one hand, and also to increase production on the other side. Development is absolutely necessary, but the environment must also be maintained as specified in the regulation No. 5 (1984). In fact, the goal of development in relation to the environment is to improve the environmental benefits and minimize risks to the environment, so there is a rising standard of living, and humans can live healthy, safe and humane.

Good and healthy environment is a right of every citizen of Indonesia as stated in Constitution of the Republic of Indonesia, that every person has an equal right to a better environment and healthier. Environmental aspects are soil, water and

air, is an important component of human life and other living things. The efforts made by the government in terms of waste management, especially in industry is to conduct operational control of the industries that produce hazardous waste.

The urban environment is an ecosystem, which is formed from the various communities. One indicator of the current development is the number of motor vehicles increased sharply. Motor vehicle at the time of disorder or damage, requires a skilled mechanic. Car repair shop in the city of Makassar in general an individual business and are included in the category of small and medium enterprises as set out in the Act. RI. No. 9 / 1995. According to Marbun (2005: 25), clearly states that the auto repair activities include maintenance and repair of vehicles, welding and painting, and washing cars. This car repair potential to pollute the environment, because of the

waste generated in the form of solid waste (garbage), liquid, and waste vehicle exhaust.

According to Tamrin, (1997: 67), said that the level of awareness of the environmental of auto shop mechanic is in the low category. Other studies claim that a car repair shop in the city of Makassar is potentially detrimental to the environment such as pollution of noise, temperature, exhaust gas, waste water, and trash (Chaeruddin, 1993: 72), further confirmed by research (Hashim, 2004: 59) which confirms that the waste management workshop in the city of Makassar in general are not yet qualified, especially in the handling of the waste exhaust gases. Another study states that waste management workshop in the city of Makassar is not maximized (Anwar, 2003: 86). The main problem faced by the motor vehicle car shop include: (1) the workshop does not have waste storage, (2) lack of knowledge about waste management, and (3) the lack of supervision of the workshop leaders, governments and communities to manage waste. This condition will cause environmental degradation due to the waste produced can pollute the environment around the car repair shop.

The purpose of this study was to: (1) identify waste management in an auto repair shop, (2) determine the barriers faced by managers workshop in waste management, (3) determine the efforts made by the workshop manager in waste management, and (4) determines the efforts made by the government in maintaining the quality of the environment around the car repair shop in the city of Makassar.

## RESEARCH METHODOLOGY

This research was conducted in the city of Makassar, South Sulawesi Province, in April-July 2009, the number of car repair shop in the sample as many as 112 units spread over 14 districts and 142 villages. This study uses a survey approach to describe the condition of the car repair shop. Methods of data collection research using interviews and questionnaires giving

workers and workshop leaders, governments, and communities around the car shop repair. The number of respondents each car shop repair are 2 employees and 1 of car shop repair manager. The data obtained (secondary and primary data) will be analyzed descriptively to obtain answers to the questions proposed research.

## RESULT AND DISCUSSION

Motor vehicles (cars) in the city of Makassar for the last 3 years on average grew 13.87 percent, this is due to several factors, among others: (1) an increase in population, (2) improvement in economic conditions, and (3) the increased mobility society. This growth provides business opportunities in the field of auto repair shops, although the rate of growth of only (4.81 percent) per year. Conditions that must be met in order to open the workshop, among others: (1) have a place and adequate working space, (2) not be in residential areas, (3) have the expertise and skills, and (4) have adequate working equipment. The fact that the location of the deployment of a car repair shop (56.25 percent) are located in residential areas and also on major roads. it is a form of strategy to get customers. In general, the workshop activities include: (1) service and repair (59.82 percent), (2) welding and painting, and (3) washing the car. The percentage of service and repair is very dominant as car maintenance should be done regularly.

Education level of carshop managers (93.75 percent) are high school, while the education level of mechanical (82.50 percent) are also high school. They should have adequate knowledge and understanding of hygiene and environmental management. The level of education can make a significant function in maintaining the surrounding environment. Waste car workshop activities are grouped into three types, namely (1) solid waste, (2) liquid waste, and (3) exhaust gas fumes, these three types of waste if not managed properly can be adverse the environment. Total percentage of each waste are: solid waste

(31, 25 percent), liquid (100.00 percent), and waste gas / fumes (6.25 percent). Construction of solid waste storage is done by: (a) store in the open space (68.75 percent) for large quantities, (b) a shelter made of walls, (c) a shelter made of wood. Construction waste storage for used oil was: (1) applies in the drum (90.63 percent), and (2) buckets (9,37 percent). The oil used to be accommodated with a good container. For this type of waste gas / fumes result from burning fossil fuels, both gasoline (petrol cars), and diesel-fueled cars can have consequences such as eye irritation and shortness of breath. To avoid the impact of waste gas / fumes, only 6.25 percent of a car repair shop has a chimney construction permanently stationed on the roof of the building. The presence of the chimney to help release the gas / fumes into the air. Other results showed that only 2 of auto car shop (6.25 percent) that provides a vehicle for the transport of waste.

**Barriers of car repair shop manager in waste management**

Some of the factors causing the car repair shop manager who has not made waste management because:

**1. Knowledge of waste management**

Knowledge of waste management, with regard to the level of education that can affect someone in the ability to think, understand the importance of cleanliness of the environment, its role in environmental management, and serious attention so that the workshop manager not adversely affect the environment around the location of the workshop, but the workshop manager expressed lack of knowledge about solid waste management as much (40.62 percent), for liquid waste, (66.63 percent), and waste gas / fumes, by (93.75 percent).

**2. Guidance on the preservation of the environment**

The government's efforts in preserving the environment has been done for example by coaching workshop workers working with several agencies, such as the Department of Health, and environmental services. However, (81.25 percent), the

workshop manager admitted that he never received counseling and the rest have been getting counseling.

**3. Guidance on waste management**

The government has sought to improve the quality of the environment around the car repair shop through training of employees. Form of counseling is done by giving a boost to perform sorting of waste, provision of bins, waste transportation, waste disposal and recovery. However, as much as 75 percent said not receive the counseling.

**4. Training in waste management**

The training given to managers in the form of waste management practices include: solid waste, liquid waste, and gas pollution, although the training is not periodic. Car repair shop that states do not receive training as much as 90.63 percent. This is due, among others, because: (1) the absence of allocation of time for that activity, (2) the lack of a budget to implement the training.

**5. Manager's efforts in waste management**

Waste generated by the car repair shop, both solid waste, liquid, or gas/ fumes can not be thrown away without receiving treatment in advance so not to cause bad influence to the environment around the shop. It required effort of workshop manager in managing waste. The results of the interview respondents described that waste management efforts that have been made have not been optimally integrated. Waste management businesses include:

**a. Waste sorting workshop**

One of the efforts on waste management is waste sorting of classification and dimensions (size) of waste such as municipal solid waste iron/plate, wood, tires, rubber, broken glass, plastic, cardboard, asbestos, seal, sawdust scars and used cloth. Liquid waste such as engine oil, steering oil, gears oil, oil transmission, grease, water batteries, and brake fluid. Car repair shop has made efforts sorting of solid waste, liquid, or gas / fumes which all respondents were 64 people (100 percent) said do sorting.

**b. Provision of waste disposal site**

Efforts have been made of car repair shop manager (93.75 percent) said it had provided shelter solid waste in various forms, in the form of open, made of walls and materials of wood, then used oil wastewater (100.00 percent) has been accommodated by the container drums, buckets and jerry cans, so that does not seep into the ground and contaminate the water, then waste gas/fumes (100.00 percent) said they did not provide. This place is a temporary shelter, then transported to the waste disposal industry for further processing.

There are several factors that led to the car repair shop manager is not doing the processing, among others: (1) the cost, (2) the lack of the government and other parties to provide education and training on waste management workshop (3) lack of managers awareness due to poor pollution caused by car repair waste, (4) lack of guidance, monitoring and supervision of the government, community and non-governmental organizations and other (5) the absence of sanction given to the managers of the car repair shop when not treat waste.

c. Car repair shop Waste transportation

Not one of the 64 people management of car repair shop (100.00 percent) said they did not provide a vehicle to transport the waste of car repair shop.

d. Waste collection

Solid waste (garbage) that has no economic value was collected at a temporary shelter in front of the car repair shop. A total of 81.25 percent stated to sell waste car repair shop that still has economic value, such as iron, waste oil used. Sales of iron waste, distributed to employees to improve their well-being and as a work incentive, although respondents said sales to raise capital (investment).

e. Waste disposal

The volume of residual waste strewn around the shop though most workshops not provide trash. Garbage disposal a means of someone directing to not throw trash at any place. but the fact is, there was still some trash scattered on shop locations and dumped on the roadside. Still as much

(28.13 percent) said sometimes there is still garbage strewn, for liquid waste (37.50 percent) said throw in the drains or drainage, this condition describes the level of awareness of each manager workshop and employees, because cleanliness around the shop to the expectations of government and the public in order to avoid contamination of the waste generated from the shop. Waste gas/fumes (93.75 percent) disposing of waste at the curb.

There is a tendency and habit liquid waste directly disposed into the sewers, ditches assuming it is a proper means of waste disposal, while the solid trash, also not optimally provided for waste generated from shop activities only slightly, although the form of cans, bottles, cardboard, plastic and paper, the existence of such facts lead to solid and liquid waste can disrupt the environment.

Several factors led to, among others: (1) lack of awareness workshop managers and employees of the bad consequences that can be caused by sewage pollution, (2) lack of guidance, monitoring and supervision of the government, the public and other non-governmental organizations, (3) the absence of sanctions given to the manager of the garage when litter the place, and (4) the manager of the garage had always assumed that good environmental hygiene problems of liquid and solid waste responsibilities of government, because the managers pay the fees cleanliness.

f. Waste recovery

Waste recovery efforts inadequate because only 21.87 percent to re-use iron/plate, and wires are still in good condition. Some of the reasons (1) does not reduce power if installed, (2) reduce the volume of waste, (3) reduce the cost of production, means increasing profits. Wastewater, and gas/fumes (100.00 percent) did not recover.

g. Supervision of auto car shop cleanliness

Cleanliness in the work environment became an extremely important because it can: (1) increasing productivity, (2) avoid work accidents, and (3) minimize environmental pollution. Cleanliness can be

maintained if done continuous supervision until a habit to clean behave. Supervision of shop management led to have adequate sanitation, proved 64 people (100 percent), there is a leadership oversight in terms of cleanliness.

**h. Provision of sand or sawdust**

To maintain the cleanliness of the floor as the activities of service or repair, they clean it with sand or sawdust from a puddle or oil spills. This is the second reason they are doing this type of material has a relatively good absorption of the oil or grease spilled, therefore one of the two types of material should be always available. A total of 93.75 percent has been providing sawdust or sand in storage. Car repair shop has a commitment to maintain cleanliness and avoid contamination of soil and water due to oil impregnation, and the oil in the ground.

**i. Ability waste shelters**

Ability car shop waste shelter is one of the indicators: (1) high or low commitment of shop manager in maintaining environmental sustainability, (2) a lot or at least the volume of work from their car workshop activities. Adequacy shelters waste becomes very important because the shelter is small, with a high volume of work, the waste generated can not be accommodated within a certain time period, resulting in sewage can overflow and scattered. Adequacy of shelters waste for a period of one month, as many (100 percent) shelters can accommodate waste generated within one month.

**j. Provision chimney**

Management efforts in providing tools for testing machines (performance) and a tool to measure the levels of exhaust gas and the need to have done, but many companies do not have the tools, several reasons, among others: (1) the expensive machinery and equipment tests to measure levels of exhaust gas, (2) the tool is necessary because it can deliver results in the form of data or evidence that the car is worth or not worth the operation, and (3) lack of demand from customers to check and measure the levels of vehicle exhaust.

So that the car can remain in good condition, then (1) is always in a state of default, (2) running vehicle with no forced, and (3) do service (tune-up) or repairs, so the cause of the gas/fumes sometimes black and smelling can be repaired. Disruption caused by waste gases in the form of smoke include: shortness of breath, and eye irritation. To minimize the waste generated due to gas/smoke just as much (6.25 percent) to install a chimney so the smoke can be blown into the air, the other side (93.75 percent), not put up the chimney on the grounds: (1) require the installation of flue considerable cost, and (2) are considered not disturb the public.

**6. Government Efforts in Environmental Care**

As well as the efforts that have been made the shop manager in waste management, municipal government of Makassar city, sought to keep the environment well maintained. The efforts made by the Department of Industry, Trade and Investment Cooperation, and the Department of Environmental Management, that the quality of the environment to be maintained as follows:

Results on interview with the Head of Department of Industry, Trade and Investment Cooperation, regarding the efforts that have been made in maintaining the quality of the environment as follows: (1) each of the car repair shops already have a business license (2) counseling, and guidance is given to the manager of the shop to keep referring to the document management environment or Letter Statement of Environmental Management (SPPL), which has been held for the completeness of the files on the processing time of business license, (3) the training given to the shop manager to provide quality service and waste management properly, (4) periodic supervision, and monitoring for waste management.

Some of the requirements for obtaining a business license of car repair shop, among others: (a) has a place and adequate work space, (b) is not in residential areas, (c) have the expertise or staff who are experienced in



their field, and (d) have working and safety equipment, and (5) imposing sanctions for managers to close down if the shop is still violated after being given a coaching, counseling, training, and supervision, and monitoring.

**7. The government's efforts in environmental conservation**

The government sought to keep the environment well maintained by the development of training of waste management. Supervision and monitoring is done as a priority to prevent the potential for environmental contamination, and to impose sanctions on a car repair shop manager who pollute the environment and do not pay attention to the cleanliness of the workshop environment.

**CONCLUSION**

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

1. Waste management in the city of Makassar car garage can be described as follows: (1) make a deposit of waste in the open for solid waste, (2) holds liquid waste in containers such as drums and jerry cans, (3) exhaust pollution released into the atmosphere through the chimney .
2. Barriers faced by managers of auto repair shops in waste management in Makassar, namely: (1) the lack of knowledge about waste management, (2) less education on environmental and waste management, (3) the lack of training for auto repair shop waste management.
3. The efforts have been made of car repair shop manager in waste management, such as: (1) waste sorting, (2) providing shelter for storage of solid waste, wastewater, and waste gas/smoke, (3) a few types of waste can be reused, (4) provided sand or sawdust to clean the floor from grease or oil spilled.
4. The Efforts that have been carried out by the government in the maintenance of the environment, such as: Guidance

counseling on environmental management and waste management to the workshop manager, training how to manufacture septic tanks, training how to create a chimney for the release of gases / fumes, supervision and monitoring of a car repair shop that has a tendency polluting, and the imposition of sanctions for a car repair shop manager do not care about the cleanliness of the environment.

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