



UTY

UNIVERSITAS **T**EKNOLOGI YOGYAKARTA



Proceeding ISQAE 2016

5TH INTERNATIONAL
SEMINAR ON
QUALITY & AFFORDABLE
EDUCATION

**"Enriching Quality and Providing Affordable Education
through New Academia"**

7th- 8th December 2016
The Sahid Rich Jogja Hotel
Yogyakarta
Indonesia

©Faculty of Education
Universitas Teknologi Yogyakarta
ISBN 978-602-72540-1-5

Proceeding

ISQAE 2016

5TH INTERNATIONAL SEMINAR ON QUALITY & AFFORDABLE EDUCATION

**Enriching Quality and Providing Affordable Education
through New Academia**

Jointly organized by:



Hosted by:



7th - 8th December 2016

**Faculty of Education
Universitas Teknologi Yogyakarta, Indonesia**

***Proceeding of the
5th International Seminar on
Quality and Affordable Education***

***Enriching Quality and Providing Affordable Education
through New Academia***

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Proofread by:

Publication unit, ISQAE 2016

ISBN: 978-602-72540-1-5

Published by

FACULTY OF EDUCATION
Campus 1 Universitas Teknologi Yogyakarta
Jl. Ringroad Utara, Jombor, Sleman - Yogyakarta 55285
Phone (+62 274) 623310 (ext.) 167 - Fax. (0274) 623306
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First printed, February 2017

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All the papers in this proceeding are presented at the 5th International Seminar on Quality and Affordable Education (ISQAE), 7th – 8th December 2016 at the Sahid Rich Jogja Hotel Ballroom hosted by Faculty of Education, Universitas Teknologi Yogyakarta, Indonesia.

Acknowledgement

Rector of Universitas Teknologi Yogyakarta

Assalamu Alaikum Waramatullahi Wabarakatuh

Ladies and Gentlemen,

I am grateful indeed that God blesses us for participating in the 5th International Seminar on Quality and Affordable Education (ISQAE) 2016. I welcome the General Secretary of the Ministry of Research and Technology for Higher Education of the Republic of Indonesia. I am sure that the Ministry of Education supports Universitas Teknologi Yogyakarta to conduct scientific activities. I am also thankful that many professors, lecturers, teachers, and students attend this seminar to share knowledge and ideas.

Universitas Teknologi Yogyakarta always supports the faculties to hold international seminar and other academic activities for the lecturers and students. We like to maintain our cooperation with national and international universities to carry out national and international programs. We believe that our lecturers and students must have national and global experience to enhance their capabilities.


In addition to conducting international programs to improve the capabilities of lecturers and students, UTY is happy to work together with other universities and the government to increase the quantity and quality of research and publication. We are proud to have some MoUs with international universities in research and publication development aspects. Also, we are planning to build 16-floor tower for UTY's Research Park.

Today, The Faculty of Education of UTY is holding an international seminar and it is our commitment to conduct national and international scientific events every year. We dedicate our efforts to the development of science and technology.

Again, thank you for participating. My special thankful appreciation goes to ISQAE consortium members; Universitas Negeri Jakarta, Universiti Malaya, Universiti Teknologi Malaysia, Universitas Negeri Manado, Universitas Muhammadiyah Makassar that have supported us. I really wish all presenters and participants a very valuable conference. Hopefully it will bear precious knowledge and ideas.

Wassalamu Alaikum Waramatullahi Wabarakatuh

Yogyakarta, 7th December 2016
Yours Sincerely,



Prof. Bambang Hartadi, Ph. D., M.M., C.A., C.P.A.
Rector of Universitas Teknologi Yogyakarta

Acknowledgement

Dean of Faculty of Education Universitas Teknologi Yogyakarta

Respected the General Secretary of the Ministry of Research and Technology for Higher Education
Respected the Rectors and Deans of ISQAE Consortium members
Respected all speakers, presenters, and participants

Assalamu Alaikum Waramatullahi Wabarakatuh

I welcome you to the 5th ISQAE 2016 held by Faculty of Education, Universitas Teknologi Yogyakarta. I hope you participate actively to develop knowledge and ideas related to the improvement of education that we may serve to our students. The discussion on education is a continuous activity. It will support the effort to improve the quality of education system, and educators. The target of improving quality is influenced with the social and economic conditions of society in the system.

International Seminar on Quality and Affordable Education (ISQAE) 2016 is a seminar that will discuss and find recommendations to the governments and institutions that play role in it. The seminar is conducted by a consortium consisting of Universitas Negeri Jakarta, Universiti Malaya, Universiti Teknologi Malaysia, Universitas Negeri Manado, Universitas Muhammadiyah Makassar. The consortium will be inviting other institutions from South East Asia countries to work together to improve the quality of education in all countries of South East Asia.

ISQAE 2016 certainly considers some matters in education such as economic condition, advancement of technology, political situation, and etc. However, it is not only in the point of view of considering them as threats but also in the point of view of considering them as opportunities. Educators should have a lot of ways to generate improvement in their countries. They have big responsibility for improving the quality of new generation in their countries.

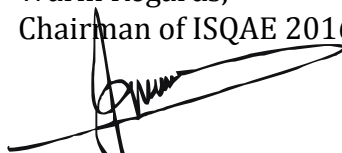
Education must become a major factor of problem solving system in a country. However everyone in a country has a right of having education. Education must be affordable. The government and all educators should talk and then can determine factors to make education affordable. The factors that guarantee the quality and affordability of education can become new academia.

We expect to have solutions. Therefore, we invite educators from South East Asia countries. We are certain to get ideas from educators coming from similar areas with similar cultures of life.

Again, thank you for participating. I wish you have good and valuable conference.

Wassalamu Alaikum Waramatullahi Wabarakatuh

Warm Regards,
Chairman of ISQAE 2016



Dr. Mustaqim Pabbajah, M.A.
Dean of Faculty of Education - UTY

Contents

Cover Page	i
Acknowledgement	iii
Contents	v
The Importance of Sex Education in High School Students: An Islamic Perspective <i>A. Z. Arifin</i>	1
The Employees' Performance Related to the Enforcement of Merit Pay System: A Case Study in RS. Soekanto Jakarta <i>Agus Priadi</i>	10
The Analysis Pronunciation of Words in the Field Phonology toward a Child at Two Years and Eight Months: A Case Study <i>Ananda Setiawan, Miftah Komala Putri</i>	17
Profil Pemahaman Siswa SMPLB Tunarungu pada Konsep Bangun Geometri Datar Ditinjau dari Perbedaan Gender <i>Andi Husniati</i>	24
Authentic Assessment Application in Essay Writing Skill Learning Process of Students Grade X SMAN 1 South Galesong <i>Andi Paida</i>	35
Orientasi Gurupasca Pemetaan Kompetensi dalam Sistem Pembelajaran Abad 21 <i>Andi Sukri Syamsuri, Ishaq</i>	42
The Use of <i>Batak</i> Illocution Literacy " <i>menolak</i> " in Surakarta <i>Anggun Melati Sari, Andayani, Sumarlam</i>	53
Pig Hunting Society Cultural West Sumatra in the Novel <i>Pulang</i> by Tere Liye <i>Arifa Ainun Rondiyah, Nugraheni Eko Wardani, Kundharu Saddhono</i>	60
The Use of Epistemic Modality in a Novel <i>Negeri 5 Menara</i> and Its Implications towards Learning in High School <i>Arista Mayang Sari</i>	67
Improving Prosocial Behavior by Hopscotch Gamebased on Javanese Culture of Kindergarten Students <i>Asroful Kadafi, B. Tika Ambarsari</i>	73
The Implementation of ICT in Improving Young Learners' Writing Skill through Collaborative Method <i>Astry Wulandari</i>	79

Minimizing Brain Drain: Optimizing Triple Helix Scheme and the Indonesia Brain Drain Community (IBDC) <i>Baharuddin, Dian Lesmana, Dewi Novitasari, Inggritia Safitri</i>	84
Interrelationship of Chemistry Achievement and Strategic Metacognition in Students Gender Perspective <i>Benny Yodi Sawuwu, Senna Prasemmi.....</i>	93
Teaching Application Letter through Email for the 12 th Grade Students of SMKN 3 Serang Academic Year 2016/2017 <i>Cucum Rohmawati.....</i>	101
"Learn While Cultured" as Culture Conservation Efforts with Innovation in Learning Indonesian and Implementation Plan on Learning Text Report of Observation <i>Darmina Pratiwi Barus</i>	110
Learning through Media Development Using Assure Model <i>Darnawati, Jamiludin, Mursidin, Nani Yuniar, Waode Ade Sarasmita Uke</i>	118
Environment Assessment Base on Temperature and Rainfall Related DHF Cases in Jakarta <i>Dede Tarmana.....</i>	125
Implementasi Program Induksi bagi Guru Pemula Sekolah Dasar Negeri di DKI Jakarta <i>Desi Rahmawati, Dirgantara Wicaksono.....</i>	133
Use of Audio Visual Media and Technical Writing <i>Feature</i> Daniel R. Williamson in Learning Essay Writing <i>Devi Surindra, Sarniti, Andi Afriza DS</i>	141
Character Education Based on Positive Psychology to Improve Indonesia's Human Resources Quality <i>Dian Yudhawati.....</i>	147
Integration the Elements of Javanese Culture in Learning Process to Strengthen Youth Character <i>Djoko Sulaksono, Bagus Wahyu Setyawan.....</i>	151
Students' Gender Relation on Achievement Result of Fluid Statics Investigated by Contextual Teaching and Learning Under Android Application <i>Dwi Nanto, Yusina Fadla Ilmi, Diah Mulhayatiah</i>	156
Peningkatan Prestasi Mata Kuliah Pemrograman Visual Mahasiswa S1 Pendidikan Teknologi Informasi Fakultas Pendidikan UTY Menggunakan Metode Belajar Berbasis Masalah <i>Dwi Ratnawati, Tri Widodo, Vivianti</i>	164
Language Learning in Digital Based Communication Era <i>Dyah Mukaromah, Suryo Sudiro, Karladian Putri.....</i>	174

Evaluation of Quality Management Head of Study Program and Performance of Lecturer to Visionary Leadership at Islamic University 45 Bekasi <i>Diyah Yuli Sugiarti, Ramdani Murdiana</i>	181
Program Biaya Operasional Pendidikan: Suatu Upaya Peningkatan Mutu Pendidikan di Sulawesi Tenggara <i>Edy Karno, Syahrul</i>	189
Meningkatkan Aktivitas dan Hasil Belajar Mahasiswa Biologi melalui Penerapan Model Kooperatif Group Investigation dengan Pendekatan Salingtemas pada Mata Kuliah Pengetahuan Lingkungan <i>Eka Apriyanti</i>	193
Influence of Learning Model Beyond Centers and Circle Times (BCCT) and Independence the Creativity of Children Ages 5-6 Year <i>Elindra Yetti, Adianti Ruqoyah</i>	207
The Students' New Environmental Paradigm (NEP) of Mathematics Study Program at Universitas Sultan Ageng Tirtayasa in the Teaching-Learning of Environmental Subject <i>Enggar Utari, Nadiroh, Shahibah Yuliani</i>	214
The Efforts to Improve Mathematics Learning Activity Using Cooperative Learning Model Type Two Stay Two Stray in Linear Program Material Student Class XA SMK Muhammadiyah 1 Kalasan <i>Ervin Tamta Lirrawati, Mardiyana, Dewi Retno Sari Saputro</i>	220
Developing Curiosity through Linguistic Intelligence-Based Learning to Improve Students' Critical Thinking and Creativity <i>Ervira Maharani, Eka Kartikasari, Vouzya Hamdi</i>	226
Pembelajaran Kewirausahaan di Pesantren Wirausaha Agrobisnis Abdurrahman Bin Auf Klaten <i>Fitri Nurlaili</i>	232
The Relationship of Leadership, Smart IHC, Service Quality with the Patients' Satisfaction at Public Health Centers in Manado City <i>Fransien Tompunu, John Senduk, S. Simanjuntak, JAM Rawis</i>	240
Gender in Classroom Discourse <i>Hartini</i>	249
The Effectiveness of Applying Mind Mapping Strategy on Student Speaking Ability: The Quasi-Experimental Study to Six Grades Student in Cikande I Elementary School, Serang <i>Ida Nuraida</i>	255
Pengaruh Metode Pembelajaran dan Motivasi Belajar terhadap Hasil Belajar Praktikum Perkantoran <i>Idah Yuniasih</i>	262

Motivation Improvement of Learning and Skills Writing Text Anecdote through Contextual Approach and the Use of Audio Visual Media "Video <i>Sentilan Sentilun</i> ": Classroom Action Research in Class X IS 2 at SMA Negeri 1 Surakarta <i>Indri Kusuma Wardani, Retno Winarni, St.Y. Slamet</i>	270
Teaching Scholar Contribution on Learning Process and Passing Grade Improvement at the Elementary School in Kepulauan Talaud of Indonesian Boundary Territory <i>Irma Djanapa Bulow, Fientje Oentoe, Johannis Senduk, Sanusi Gugule</i>	278
Analisis Kesalahan Berbahasa Siswa SMP Terbuka Cimanggung dalam Menulis Catatan Harian <i>Istya Juniarti Amalia, Yusuf Nurdiansyah, Rani Noereani</i>	287
Pengembangan Model <i>Brain Base Learning</i> pada Jenjang Pendidikan Anak Usia Dini untuk Menumbuhkan Kreativitas Manusia Indonesia Sejak Dini <i>Iva Sarifah, Sofia Hartati, Sudharno Dwi Yuwono</i>	294
Mechanism of Assessment and Reflection on Thematic Assignment for Strengthening of Critical Thinking and Democratic Attitudes in Learning <i>J.O. Raturandang, Ch. Medellu</i>	302
Pengaruh Komitmen, Efikasi Diri, Motivasi dan Keefektifan terhadap Produktivitas Kerja Guru Sekolah Menengah Pertama Negeri di Kabupaten Minahasa Utara <i>Jane Esther Sangian</i>	311
Development Design and Implementation Task Cross Energy Thematic Study of Education <i>Jeane C. Rende</i>	325
Integration of Local Elements in Design and Implementation Project Thematic Aspects of Physical Damage and Abrasion Tema Coastal Areas in District Manganitu <i>Jeane V.Tumangkeng, Sanusi Gugule</i>	337
Collaborative Research of Lecture-Student-Teacher for Strengthening the Teacher Roles in Designing and Implementation of Thematic Assignment <i>Johan Abram Rampengan</i>	344
Representasi Wanita dalam Dongeng Jawa sebagai Sarana Pembentukan Karakter dan Sarana Memperkuat Identitas Kebangsaan <i>Kartika Rahmat Sari Dewi, Fitriana Kartika Sari</i>	356
Development Program in Parenting Class on Early Childhood Education Institution in Southeast Sulawesi <i>La Ode Anhusadar</i>	366
Analysis of Creative Thinking Skills at High School Students Level on the Concept of Temperature and Calor <i>Ma'ruf, Riskawati</i>	373

Respon Mahasiswa Pendidikan Guru terhadap Mata Kuliah Pilihan pada Program Studi Pendidikan Guru Sekolah Dasar Universitas Muhammadiyah Tasikmalaya: Studi pada Mahasiswa PGSD Angkatan 2015 <i>Maesaroh Lubis</i>	379
Pengaruh Bahasa Inggris dalam Membentuk Kosa Kata Baru Bahasa Indonesia <i>Mokh. Yahya, Andayani, Kundharu Saddhono</i>	384
Inventory of Literacy Humor towards Applying of 2013 Curriculum <i>Muhammad Asyura</i>	390
Keep Smile Book: An Instrument of Students' Affective Evaluation <i>Muhammad Hanif</i>	397
The Development of Interactive e-Book Learning Materials through 4s TMD <i>Munawwarah, Paed. Sjaeful Anwar</i>	402
Eksistensi Bahasa Indonesia dalam Membangun Keberagaman Budaya <i>Munirah</i>	409
Development of Words Visual Media for Students with Hearing Impairment to Stimulate Language Skills in Primary School in Jakarta <i>Murni Winarsih, Indrajaya, Agatha Pianora Saris</i>	417
The Character Education Model Based on Local Cultural Values <i>Nanik Hindaryatiningsih</i>	426
Civilize Local Language to Implant the Ethics Since Early Childhood: A Literature Studies <i>Ni Nyoman Sudiani</i>	435
The Approach Analysis of Child Education Bajo Ethnic: Study in Floating High School Muhamadiyah Wakatobi, Southeast Sulawesi - Indonesia <i>Nurdin</i>	443
Students' Comprehension Profile about Character based Assesment of Physics Experiment <i>Nurlina</i>	451
Profesionalisme Guru Pasca Sertifikasi di SMA 1 Bissappu Kabupaten Bantaeng <i>Nursalam, Suardi</i>	458
Expressive Speech Acts of Ethnic Papuan in Surakarta <i>Nurul Hidayah Fitriyani, Andayani, Sumarlam</i>	464
Ecofeminism for Ethical Behavior Figure Mabel in the Novel <i>Tanah Tabu</i> Creation Aninditia S. Thayf <i>Paramita Nur Pratiwi, Suyitno, Nugraheni Eko Wardani</i>	471
Utilization Management Linow Lake as Natural Laboratory in Department of Physics <i>Patricia Mardiana Silangen</i>	477

Implementasi Metode Sosiodrama dalam Pembelajaran Unggah-Ungguh Bahasa Jawa di SMPN 2 Jogonalan Klaten <i>Prima Veronika, Shinta Tyas Pratisthita</i>	489
Management and Governance Boarding School towards World Class: Case Study at Pondok Pesantren UICCI Sulaimaniyah Indonesia – Turki <i>Ramdani Murdiana, Rita Aryani, Diyah Yuli Sugiarti</i>	498
Good University Governance, Is It Necessary? <i>Rhini Fatmasari</i>	505
The Effect of Teacher’s Competency, Achievement Motivation and Creativity on Their Teaching Performance: A Study in Distance Learning Education Program <i>Rhini Fatmasari, Untung Laksana Budi</i>	510
Quality Management based Religion as Academic Support in UICCI Sulaimaniyah Boarding School <i>Rita Aryani, Ramdani Murdiana</i>	517
Slow Reading and Speed Reading: Two Different Techniques in Reading Comprehension <i>Sayit Abdul Karim, Suryo Sudiro, Syarifah Sakinah, Yek Amin Aziz</i>	526
Analysis of the Role of Book Journal Activities Reading Results in Order to Create the Motivation Cultural Literacy: A Case Study in Class X SMK Santo Paulus Surakarta 2016/2017 Academic Year <i>Selvya Putri Kumalasari, Budhi Setiawan, Sumarlam</i>	531
Penguatan Jati Diri Bangsa melalui Pengintegrasian Nilai-Nilai Karakter Bangsa Indonesia dengan Strategi Pembelajaran <i>Contextual Learning</i> <i>Sihadi Darmoduhardjo</i>	535
Principal Leadership in Implementing School Based Management in Face of the Challenges of Society in the 21 st Century <i>Sita Ratnaningsih</i>	541
The Attitude of the Main Character to Love form on Novels Entitled “Ayat-Ayat Cinta” by Habiburrahman El-Shirazy and “Di Bawah Lindungan Ka’bah” by Hamka: Psychological Literature Study <i>Siti Ayu Ningsih</i>	549
Conflict Management University of Sariputra Indonesia Tomohon <i>Sjerly Maria Lumi, Jolanda Rawis, Sanusi Gugule, Deetje Katuuk</i>	554
Penerapan Nilai Karakter Peserta Didik di Satuan Pendidikan Ditinjau dari Gaya Kepemimpinan, Sikap Guru, Budaya Sekolah <i>Sri Ratna Pasiak</i>	560
The Teaching and Learning of the Siti Zubaidah Version of Dulmuluk (DMSZ) Performing Arts for Students of Faculty of Teacher Training and Education Sriwijaya University: An Effort to Preserve Traditional Culture Arts <i>Sungkowo Soetopo</i>	567

Book Report to Promote Reading Interest and Accessing Knowledge and Skills for the Students of Senior High School of Seminary of Mertoyudan, Magelang, Central Java <i>Surawan Martinus</i>	573
Aktiviti Kesukarelawanan ke Arah Pembangunan Modal Insan di Malaysia <i>Syarfa Nurrezan Salamun, Mahani Mokhtar, Abdul Halim Abdullah, Azlina Mohd Kosnin, Nornazira Suhairom</i>	580
Life Philosophies of Banyumas People in the Ahmad Tohari’s Novels <i>Teguh Trianton, Sarwiji Suwandi, Herman J. Waluyo, Kundharu Saddhono</i>	587
Development Design and Thematic Task Implementation of Water Cycle for Integration Process Concept – Local Context – Global Context to XI IPA 1 SMA Negeri 1 Manganitu Students <i>Theresje Mandang</i>	597
The Use of <i>Puzzle Games</i> Media in Developing TGT Type Cooperative Learning Model to Improve Students’ Learning Achievement in Logarithm <i>Titik Purwandari, Mardiyana, Ikrar Pramudya</i>	602
Students’ Problems in Translating Texts <i>Wahyuni Rismawati, Imam Ghozali</i>	610
Comparison of Linear Method and Equipercentile Equating Based on Length of Test on Small Sample Size <i>Wardani Rahayu, Maria Ulfah</i>	617
Training Model Agility for Beginners Athlete Pencak Silat <i>Widiastuti, Muhammad Hasyir</i>	624
Improvement of Rheumatoid Arthritis on Elderly <i>Posyandu</i> Members through Health Counseling <i>Winarti Agustina</i>	630
The Accuracy of <i>Vertical</i> Equating with Equi-Percentile Method Based on Sample Size and Test Lenghts <i>Yetti Supriyati, Adeliyana, Wardani Rahayu</i>	637
Communication <i>Strategy</i> Student Indonesian Foreign Speakers <i>Yeyen Purwiyanti, Sarwiji Suwandi, Andayani</i>	643
Teen Magazine is a Teacher: Magazine as the Strategy to Teach How to be a “Good” Women through Hegemony <i>Zakridatul Agusmaniar Rane</i>	650
Computerized Item Banking: An Important Tool for Classroom Assessment <i>Friyatmi</i>	657

Pengembangan Materi Ajar Bahasa Indonesia Berbasis Karakter Pada Mahasiswa Universitas Muhammadiyah Makassar <i>Muhammad Akhir</i>	663
Vendor Selection Using Analytical Hierarchy Process (AHP): A Critique Paper <i>Uky Yudatama, Arief Ramadhan</i>	675
School Leadership and Management on the Curriculum Development: A Case Study of Indonesian Junior High School <i>Yuyun Yulia</i>	680
Professional Teacher Certification: Between Hope and Reality <i>Zoya f. Sumampow</i>	685

INTEGRATION OF LOCAL ELEMENTS IN DESIGN AND IMPLEMENTATION PROJECT THEMATIC ASPECTS OF PHYSICAL DAMAGE AND ABRASION TEMA COASTAL AREAS IN DISTRICT MANGANITU

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Abstract

The surrounding environment can be used as an object of study, is one solution that can lead students to be able to associate learning with local elements or with a real-life context. The purpose of this study are: (1) Develop instructional design tasks thematic basis with the input of local elements, with the teachers, students, parents and the community, (2) Describe the process of implementation of tasks thematic abrasion and damage to coastal areas, (3) Describe the mastery of the concepts of physics, the relationship between the concepts of physics to the context, the relationship between mastery of the concepts of physics and biology, the concept of the context. This research was conducted in SMA Negeri 1 Manganitu in class X D. Subjects were students, parents, community and local elements. This research is a development that is open. Collecting data using the assignment sheet, the format of observation and tests. Methods of data analysis using quantitative and qualitative analysis. The results showed that the development of thematic assignment instructions with the integration of local elements with the teachers, students, parents and the community can build a democratic learning process. The relationship between students, teachers, parents and the community for the better. In the implementation phase of the design, teachers play the coordinating role of parent and student learning activities to instill the concept and improve student learning activities. Mastery of the concepts of physics, the relationship between the concepts of physics to the context and the relationship between mastery of the concepts of physics and biology as well as the relationship between the concept and the context shows a strong correlation of the indicators correlated to the value of 0.71.

*Keywords: Local Elements, Task Thematic, Abrasion and
Damage to Coastal Areas*

Introduction

In some Indonesian coast environmental conditions tend to decrease quality. The decline in the quality of the coastal environment in many places occur mainly due to pollution and or destruction of the environment in the surrounding area. Environmental contamination can occur due to coastal input of pollutants from activities along the coastline, and or indirectly: through the river basin, offshore activities, due to the intrusion of sea water into the ground water and so on. While the Turkish environmental damage such as: coastal erosion, destruction of mangrove forests (mangroves), damage to coral reefs, fisheries resource depletion, damage to seagrass and so on. This has an impact on coastal ecosystems. Beach erosion is also called abrasion lately tended to increase in many regions. Abrasion is an erosion or reduction of land (the beach) as a result of the activity of waves, currents and tides. In this regard the soil surface compaction resulting land down and inundated with sea

water, so the shoreline change (Nur, 2004). Abrasion occurred in coastal areas, especially in the District Sangihe Manganitu, causing shoreline shifted to the mainland so that the narrowing of residential land for residents around the coast. This problem requires serious attention and handling. To overcome this problem needs to be increased awareness of the importance of protecting the environment. Education plays an important role in overcoming the problem of abrasion and damage pantai. Melalui education we can learn about the natural phenomena that occur in the environment around us. The learning model with thematic task is one model that can be developed for establishing a link with the phenomena of physics concepts abrasion and damage to the beach. Thematic task-based learning is a solution to solve the problem of abrasion damage dann beach because of the potential to build understanding, skills, attitude and behavior of students, parents and the community to resolve these issues and encourage the control problem by the community itself (Medellu, 2013). In this case the teacher's ability to package learning challenged by appropriate methods to get the message contained in them can be up to students in accordance with the planned objectives.

By utilizing the potential of the natural surrounding environment, making the environment as an object of study, implement the values of local wisdom as part of a local resource guide the students to be able to create the creativity in the learning process. Learning outside the classroom enhance their knowledge and understanding of natural systems and processes ultimately establish responsibility for the environment (Higgins, 2002). According to Popov (2008), learning context in the form of the phenomenon and the real objects in everyday life is not explicit as in the laboratory, the context must be discovered and studied. This is in accordance with the characteristics of thematic task-based learning, which could increase student learning initiatives, increased support and participation of older people, increasing the understanding of the concept as a whole (across subjects), improve their skills, positive attitude and behavior against abrasion and damage to coastal problems.

The purpose of this study are: 1) Develop instructional design tasks thematic basis with the input of local elements, with the teachers, students, parents and the community 2) Describe the process of implementation of tasks thematic abrasion and damage to coastal areas, 3) Describe the mastery of the concepts of physics, the relationship between the concepts of physics the context, the relationship between mastery of the concepts of physics and biology, the concept of the context.

Methodology

This research is a development (Research and Development) thematic task-based learning that includes the design stage, the stages of development and implementation of thematic assignment instructions by substitution or integration of local thematic elements of the school and the school environment are being targeted research / learning.

The learning activities includes 10 activities, which can be classified as follows: Identify the problem (discussion of experiences, information, etc.), evaluation of the understanding (student, parent / community), analysis, reflection attitudes and behaviors described as follows:

- 1) Event - 1. Identification and description of the condition of ecosystems, coastal erosion in the village and surrounding areas
- 2) Activity - 2. Identification, analysis and description of the effect of human activities on coastal ecosystems
- 3) Activity 3 - Identification, analysis and description of the government program, local wisdom in the preservation of coastal ecosystems
- 4) Activities - 10. Identification, analysis and description of the government program, local wisdom in the preservation of coastal ecosystems.

Analysis of the problem based on scientific concepts (Physics), analyzes the concept of the relationship with the context, attitudes and behavior

- 1) Activity 4. Understand the coastal ecosystem and relationship or interplay between the components of the coastal ecosystem
- 2) Activity 5. Learn the functions of the ecosystem components in reducing coastal erosion
- 3) Activity 6. Study the external factors (environmental) that affect coastal ecosystems and coastal erosion
- 4) Activity 7. Changes in energy from the environment into the coastal ecosystems, coastal ecosystems components function in reducing the energy that causes abrasion and function of mangrove forests in reducing energy in coastal areas
- 5) Activity 8. Analyzing the impact accumulation of garbage and liquid waste stream into the coastal ecosystem
- 6) Activity 9. Form utilization of coastal ecosystems and their impact

Subjects were students of SMA N 1 Manganitu according to the design assignment instructions thematic issues abrasion and damage to coastal areas. Students are assumed to have been or are being followed regularly in class learning about the concept of physics, so the implementation of the thematic task instructions into contextual enrichment of the concept of learning is carried out regularly in the classroom. Other research subjects are the parents of students as partners student learning for research activities to the problem of abrasion and damage to coastal areas in instructional design thematic task. Parents and communities also play a role as a facilitator of student learning, together with teachers and researchers.

Stages of Development, Research and Indicator Variables

Stages of development include: designing thematic assignment instructions, design implementation and evaluation processes, and performance evaluation. The variables were observed in the development stage include:

- a) The involvement of students in designing learning materials (development package assignment).
- b) The involvement of students in the test package assignment.
- c) Activity and productivity students in the learning process (follow tutorials, group interaction).
- d) Activities of students in the development of materials (thematic task) independently
- e) Mastery of concepts / materials duty
- f) Mastery relationship with the concept of context.
- g) Mastery of the relationship between field of study based on the concept of linkages in the context of the theme.
- h) Mastery observation procedures

Method of Collecting Data

Data is collected using:

1. The student's assignment sheet for data collection mastery of concepts, relationships between concepts, linking concepts and contexts across fields of study, the identification of relevant concepts with issues / problems within the theme.
2. The format for the data observation: student participation in the design, student learning
3. The format of the monitoring activities of observation / measurement in the field.
4. Tests to evaluate individual mastery of concepts, concept ties with the context, cross-linking concepts field of study

Data Analysis Method

Data analysis methods include quantitative and qualitative analysis. Quantitative analysis is used to describe the indicators of research variables, the correlation between indicators (correlation coefficient Spearman rho governance level), the indicator changes

from the initial meeting until the end of the meeting. Qualitative analysis is used to explore and describe patterns of attitudes and perceptions of students to design activities, implementation of learning and the role of teachers and parents or society (learning partners or facilitators).

Results and Discussion

General description of location Research

Research conducted at the coast and beaches Mala Barangka, sub Manganitu. Abrasion is happening in this village causing levees tlah made by residents to be damaged. Besides abrasion problems that exist in coastal areas is a problem of environmental pollution by coast of manure, waste disposal and household waste. Damage to the coastal environment is there can damage the ecosystem. The impact of damage to the coastal environment, biota that live in this area such as small fish will die if the pollution level is high. For that dierlukan government and community efforts to maintain the beauty and the beauty of the beach. Communities in the District Manganitu mostly fishermen, traders, farmers and civil servants.

Draft Basic

The basic design of abrasion and damage to coastal areas is the design created thematic task dalanm form of instructional materials by linking the concept of physics with contexts abrasion and damage to coastal areas. This thematic design implementation tasks carried out at the high school level, especially in high school I Manganitu class XD country with the number of students 19 people. In this basic design includes 10 events, each event was started by forming small groups consisting of 4-5 people. In each of the activities each group filling in of forms that had been prepared by the researcher. Each of these formats is filled with experience and understanding of students about erosion and damage to coastal areas in the village itself and in other villages (local elements). The design of this basis then developed when research is conducted.

Research result

Description on student participation in the development of instructional design thematic task. The results of the study the students' participation in the development of the draft thematic themes Abrasion assignment instructions and Damage to Coastal Areas grade students SMA N XD I Manganitu as follows:

Indicators -1

The number of students who attended the discussion activities designed development of thematic task abrasion and damage to coastal areas is 93%.

Indicators 2, 3, 4 and 5

The number of students who leave the relevant insert based on his experience to the task of material is 66.67%. There are some students who enter the draft materials developed in thematic task, namely:

- 1) Habits of the people who still take the beach material to be made in building materials, causing reduced volume of sand on the beach so the sea water more quickly up in residential areas.
- 2) Most of the fishermen, and still use the way that harm coastal ecosystems (poison and bomb fish).
- 3) The time for the implementation of research activities in the afternoon

The number of students who can explain the relevance of local elements with the concept of abrasion and damage to coastal areas and proposing thematic tasks included in the material is 66.67%. Of 3 students enter at the top, there are two local wisdom (1 and 2) and integrated into thematic material duty abrasion and damage to coastal areas. Percentage of the number of elements of the proposed local students and integrated in the material duty is 60%.

Indicators 6 and 7

The percentage of the number of students who enter the draft revision of the scope of the material, the depth of material, time allocation is 93%. Enter the students that when implementation tasks thematic still less for it in added time of implementation so that the thematic activities could be better as well as the allocation of time execution of tasks thematic also adjust the time outside of the implementation of teaching and learning in the school besides the students also gave input in terms of awareness public about the importance of preservation of coastal ecosystems which of course it affects the lives of people in coastal Bangka and Mala.

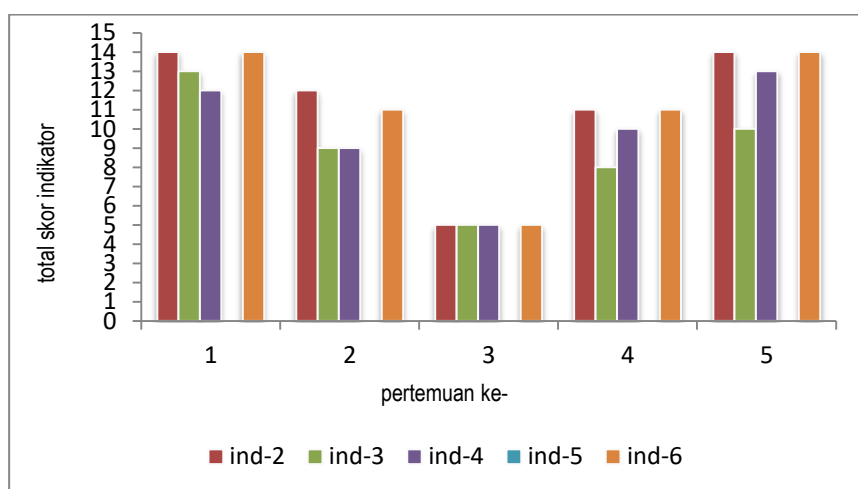
Of the few indicators that have been outlined, the students' participation in the development of instructional design thematic task well. Although the percentage of attendance of students in activities not fixed but students are quite active in doing any activity and some of them provide relevant input to be developed in the draft thematic task.

Description of the students' learning process variables

The process of learning activities of students on the design implementation phase thematic task abrasion and damage to coastal areas in class X3 SMA N I Manganitu are as follows:

Percentage of students who attended the study group was 82%, 82% were attending tutorial activities, which ask questions relevant to the material tasks / activities was 54.5%, answered questions appropriately asked the teacher or other students is 63.6%, which is involved 91% active in conducting observations. The development of students' learning process on indicators 2, 3, 4, 5 and 6 can be seen in the following graph:

Figure 1. Trend Indicators of Student Learning at 2, 3, 4, 5 and 6



Indicator 2: students who attend the tutorial activities 80% or more

Indicator 3: students who attend learning activities group, 80% or more

Indicator 4: students answer questions correctly asked the teacher or other students

Indicator 5: students answer questions correctly submitted parent / community

Indicator 6: students who are actively involved (80% or more) in the conduct of observation

The group of students who participated in the observation of very enthusiastic, visible data in the graph show almost all of the students who attended were actively involved in observation activities in coastal areas and beaches Mala Bangka Manganitu districts.

Description on mastery of concepts and relationships between concepts in context

Activities aimed to improve the mastery of concepts related to abrasion and damage to coastal areas. The average results of students' mastery of concepts related to abrasion and damage to the beach 80%.

Activities aimed at improving control of the context of inter matapelajaran with the concept of abrasion and damage to coastal areas. The average results of mastering the context associated with the concept of abrasion and damage to the beach between subjects 82.3%. Activities aimed to improve the mastery of concepts between subjects related to the context of abrasion and damage to coastal areas. The percentage of the number of students who can explain the relationship between the concept of ecosystem biology with physics concept of energy is 80%. The percentage of the number of students who can describe the biological concept of external factors (environmental) that affect coastal ecosystems and coastal erosion, the concept of energy physics that cause abrasion is 60%. The percentage of the number of students who can explain the relationship between coastal ecosystems and the biological concept of energy and energy changes in ecosystems 80%. On average mastery of concepts between subjects 73.4%.

The relationship between mastery of concepts matapelajaran physics, biology and theme abrasion and any damage coastal areas. The correlation energy concept mastery with the concept of coastal ecosystem functioning students is 0.74. Based on the analysis of the correlation coefficient, the concept of energy and the concept of coastal ecosystems exist at the level of a strong correlation. Relationship Mastery of Concepts of Physics energy and energy changes into the mangrove forest ecosystems and Functions in reducing energy in coastal areas. The correlation mastery of the concepts of physics energi and energy changes into an ecosystem and function of mangrove forests in reducing energy in the coastal areas was 0.69. Based on the analysis of the correlation coefficient, the concept of energy physics that cause abrasion to the biological concept of coastal ecosystems exist at the level of a strong correlation. Mastery of concepts energy physics cause abrasion to the biological concept of coastal ecosystems have a strong relationship. The correlation mastery of coastal ecosystems and the biological concept of physics concepts of energy and energy changes in the coastal ecosystem is 0.697. Based on the analysis of the correlation coefficient with the energy concept of external factors cause abrasion exist at the level of a strong correlation.

Discussion

Based on the results of the study, from the data obtained and passed through several stages of testing, it has been proven that for variable student participation in the development of thematic task instructional design, teacher involvement of parents and the community is also very supportive in the implementation of learning activities, as part of the democratization process of learning. According to Ozcan (2005), democratic schooling must be supported by all personnel involved in the management of the school. This is in line with the law number 20 of 2003, where the issue is how the community involvement in education. In a democratic learning process, students are given the widest possible opportunity to participate in learning. In developing the design of thematic task instruction of students involved in activities designed development of thematic tasks inside and outside the classroom.

Thematic task-based learning can motivate students to enhance their understanding and ability to analyze natural events social problems, local knowledge, and government programs related to the problem of abrasion and damage to coastal areas. Event thematic task can also build social interaction through group learning activities in schools and the initiative group learning outside the classroom. Learning contexts such phenomena and the real objects in everyday life is not explicit as in the laboratory, the context must be discovered and studied. (Popov: 2008). Context can be seen from a conceptual perspective different. Sweetser and Fauconnier (1996), quoted by Popov (2008) explained that students will access different information in different contexts. Through a variety of contexts, students can understand more fully and more clearly about the relevance of the concept, to encourage critical thinking in choosing alternative and responsible for the learning process (Beane, 1997)

Through the task of thematic relationships between students and teachers and parents become better, though both students, teachers, parents / communities are not familiar with the implementation of the tasks thematic but their response was very good because they found with their task of thematic students, parents and teachers can interact well and develop a positive attitude among parents with children through learning activities together, solving problems together and develop communication and interaction between teachers and parents /community in the learning process of children.

Thematic task can also improve the relationship between students and teachers and parents become better. Although both students, teachers, parents and the community are not familiar with this thematic task, but their response was very good. They also argued that the presence of this thematic task, students, teachers, parents and the public can interact with each other well and can solve problems together and develop communication and interaction in the learning process. Community participation in the education process to support and lift the tradition, local culture, knowledge and skills (Lacy et al., 2002).

Event task of designing and developing thematic aspects of physics with the theme abrasion and damage to the beach with the integration of local elements can build a democratic learning atmosphere. Duskusi during the design development stage can motivate students and parents, although .informasi given parents are still limited but it is encouraging parents to get involved in student learning. The achievement of student learning after following the process of learning both in the classroom and outside the classroom, but the result is quite good and encouraging students to learn more actively. This is consistent with the results Flowers et al (1999), that the joint planning, the creation of a positive work climate, and contact between teams with parents can improve student achievement scores.

Conclusion

The results showed that the development of thematic task instructions with the integration of local elements with the teachers, students, parents and the community can build a democratic learning process. The relationship between students, teachers, parents and the community for the better. In the implementation phase of the design, teachers play the coordinating role of parent and student learning activities to instill the concept and improve student learning activities. Mastery of the concepts of physics, the relationship between the concepts of physics to the context and the relationship between mastery of the concepts of physics and biology as well as the relationship between the concept and the context shows a strong correlation of the indicators correlated to the value of 0.71. Thematic task-based learning can motivate students to enhance their understanding and ability to analyze natural events, social issues, local knowledge, and related government programs abrasion problems and damage to coastal areas.

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