

Student Achievement Recording System of the Faculty of Economics Universitas Negeri Semarang

Rohmawati¹, Kusmuriyanto², Fendi Setyo Harmoko³
{rohma@mail.unnes.ac.id¹}

Universitas Negeri Semarang, Indonesia^{1, 2, 3}

Abstract. The aims of this study to design a student achievement recording system, test the feasibility of the system and identify the obstacles encountered in implementing the system. The world of work in today's era is very tight and competitive. College graduates must be equipped with qualified knowledge. In addition, soft skills also need to be mastered by college graduates, which can be obtained in student activities during college studies. Student activities teach a variety of very complex skills and abilities. These soft skills include people skills, problem-solving, communication skills, teamwork and collaboration skills, creativity, integrity and other soft skills. The student's achievements for the achievement of these soft skills also need to be recorded in an application of a good, integrated and valid student achievement recording system. The recorded achievements recorded are those organized by the Directorate General of Learning and Student Affairs (Ditjen Belmawa) and universities and managing agencies from the provincial to international levels. The method used is the Research and Development model. The Research and Development research method produces certain products and tests the effectiveness of these products in the form of an application system for recording student achievements. The result of this research is to create an application domain for recording student achievement data of the Faculty of Economics, Universitas Negeri Semarang, which is integrated called SIPRESTA. This system provides easy access for students to record their achievements during studies divided into several categories such as delegation, entrepreneurship, recognition, exchange and community service by students.

Keywords: Application Domain, Student Achievement, Student Achievement Data Disability

1 Introduction

In a work unit, there are four main functions of management, including planning, organizing, actuating, and controlling. Planning is setting goals, policies, making programs, determining methods/strategies, procedures and determining work schedules. Organizing is a grouping of activities that are accommodated in units to carry out plans and establish relationships between leaders and staff in each organizational unit. Mobilization motivates each member to carry out the achievement of goals, identify the right strategy, provide guidance and increase enthusiasm and morale. Monitoring and evaluation determine whether what is carried out is according to the plan or not. Assessing the organization's performance to effort to realize the vision, mission and goals that have been set.

Achieving success on the targets of organizational management at UNNES and especially at the Faculty of Economics requires transparency efforts in the form of an application system

container that makes it easy for the entire academic community to access these achievements easily and practically. In addition, it also requires evaluation and monitoring for one year running, and the readiness of various parties, such as elements of institutional leaders within the Faculty of Economics. Along with this, changes to UNNES policies in multiple fields also require quick responses, one of which is recording student achievements. The achievements that have been made by Faculty of Economics UNNES students from year to year always experience a proud increase. In 2018 Faculty of Economics UNNES won the best 1st place in student affairs, still in 2019-2020 the results of the assessment from the SIMKATMAWA UNNES team, the Faculty of Economics experienced a decline in student achievement ratings. One of the reasons is that the achievement database is considered less than optimal.

Moreover, the world is experiencing a Covid-19 pandemic, and Indonesia is no exception [1]. This pandemic affects all aspects of life and has created many new habits as an adaptation step by humans, including adaptation in the world of work [2]. One of the adaptation steps during the Covid-19 pandemic is to maintaining a distance between humans, this has a big impact in the world of work, giving rise to the WFO (Work From Office) and WFH (Work From Home) rules. This rule requires some workers to work from the office, while others work from home. This is in accordance with the Circular Letter of the Minister for Empowerment of State Apparatus and Bureaucratic Reform Number 58 of 2020 concerning the Work System of State Apparatus Employees in the New Normal Order. This rule explains that the maximum quota of employees is 50% of the total number of employees to enter and work in the office. This means that the number of employees or ASN is divided equally into 2 groups in one office. On the same day, group 1 works from the office (WFO) while group 2 works from home (WFH), so it keeps changing every week [3]. The application of WFH and WFO rules has both positive and negative sides [3]. Employees can work more flexibly, but it also brings some obstacles. One of them in the field of student affairs is the disability of student achievement. The application system is a must that must be made so that data collection on student achievement is recorded to the maximum.

Based on the above thinking, it is necessary to have an application that is well planned and programmed, there is a clear Standard Operational Procedure, so that every activity and achievement achieved by students is recorded to the maximum, and the quality of service in the field of student affairs has well-standardized applications. Therefore, it is urgent to design an application system for student achievement recording at the Faculty of Economics, UNNES which can be accessed anytime and anywhere under called SIPRESTA. In addition, the application will facilitate data on the achievement of student achievement in the future, both for study program accreditation and university accreditation.

2 Literature Review

2.1 Academic Achievement

According to the Kamus Besar Bahasa Indonesia [4], academic achievement is the result that has been achieved (from what has been done, done, and so on). According to Sardiman [5], achievement is a real ability result from the interaction between various factors that influence both within and outside the individual in learning. In addition, the opinion of Syah [6] states that achievement is a learning outcome covering all psychological domains that change as a result of students' experiences and learning processes. According to Suryabrata [7], academic achievement is an assessment of educational outcomes, namely to find out at the time of the

assessment the extent to which students have studied and practiced intentionally. According to Hipjillah [8], academic achievement is a process experienced by students to produce changes in the fields of knowledge, understanding, application, analytical power, synthesis and assessments. According to Hipjillah [8], academic achievement is an assessment of educational outcomes in the form of changes in the fields of knowledge, understanding, application, analytical power, synthesis and evaluation, where the results of the assessment are given based on the results of tests, evaluations or exams from each subject, the results are interpreted logically. Objective and applied in the form of numbers and sentences in accordance with what was achieved by each student in a certain period.

Ahmadi and Supriyono [9] also said that the factors that influence academic achievement are of internal factors or factors from within the individual and external factors or factors that come from outside the individual. The factors are: a) The factors that come from within the student. Physiological factors and psychological factors. Physiological factors are body health and the functioning of the five senses, especially sight, hearing, and mental health. Psychological factors are potential factors that include intellectual and talent, as well as real everyday skills. Psychological factors which include certain personality elements such as attitudes, habits, interests, needs, motivations, emotional intelligence, self-adjustment. b) Factors that come from outside the student. External factors that affect individuals include the family environment, educational environment, community environment, group or community environment, and friends.

2.2 Emotional Intelligence

The meaning of emotional intelligence Gardner's book, published in 1983 [10] under the title *Frame of Mind*, says that it is not only one type of monolithic intelligence that is important for success in life, but there is a wide spectrum of intelligence with seven main varieties namely linguistics, mathematics/logic, spatial, kinesthetic, musical, interpersonal and intrapersonal. This intelligence was named by Gardner as emotional intelligence, which Daniel Goleman called emotional intelligence. Emotional intelligence is individual's ability to motivate themselves, resilience in dealing with problems, controlling emotions, not exaggerating pleasure, regulating mental states, keeping stress loads from crippling the ability to think, empathize and pray. The definition explains that emotional intelligence is related to directing one's actions in personal and social life. Shapiro [11] and Patton and Dahlan [12] defines emotional intelligence as using emotions effectively to achieve goals, build productive relationships, and achieve success.

Dapsari [13] mentions that the characteristics of people with high emotional intelligence are: a) Optimal and always positive when handling situations in their lives, such as when dealing with events in their lives and dealing with the pressures of personal problems they face. b) Skilled in fostering emotions, where the person is skilled in recognizing self-awareness of emotions and emotional expression, as well as emotional awareness of others. c) Optimal in emotional intelligence skills, including intentionality, creativity, resilience, interpersonal relationships and constructive dissatisfaction. d) Optimizing on the values of compassion or empathy, intuition, the radius of trust, personal power, and integrity. e) Optimal in general health, quality of life, relationship quotient and optimal performance.

Based on the description that has been presented, it can be concluded that aspects of emotional intelligence lie in the ability of individuals to recognize their own emotions, manage their own emotions, motivate themselves, recognize other people's emotions and build good relationships with others. The relationship between emotional intelligence and academic achievement, Sobur [14] suggests that academic achievement is evidence of the business results

obtained by students while attending lectures as seen through the cumulative achievement index. High academic achievement illustrates high absorption and vice versa. Therefore, the academic achievement achieved indirectly becomes a prediction for individual success and reflects of quality individuals. In addition, academic achievement is one of the provisions for students to face the world of work and is also increasingly recognized by the community.

Goleman [15] argues that the brilliance of an individual based on IQ (Intelligence Quotient) is only about 20%, and the other 80% depends on other factors, including emotional intelligence, which is often called EQ (Emotional Quotient). Goleman [15] found that many people who fail in life are not due to their low intellectual intelligence, but can be caused by a lack of good emotional intelligence. Students who have high emotional intelligence are better able to recognize their own emotions, are more able to determine attitudes and make decisions wisely, are better able to control their emotions so that they can be expressed in a balanced and harmonious manner, are better able to motivate themselves, are more diligent in dealing with frustration, are more skilled. Resolve conflicts and cope with stress so that their thinking skills are not disturbed and at the same time concentrate enough on the various subject matter they receive.

These students are more able to empathize, are sensitive to the feelings of others, are more concerned about their surroundings. Thus it is easier to get along and communicate and can work well together in their social environment. Emotional intelligence is formed because of the harmonious cooperation between thoughts and feelings according to Goleman [15]. If this pair interacts well, emotional intelligence will increase and thus intelligence abilities will also increase. Emotional intelligence is needed to overcome the challenges and obstacles that arise both within and outside students who can directly affect the psychology of students. From the explanation above, can concluded that students who have emotional intelligence are one of the important factors in academic achievement in students, because students who have high emotional intelligence can overcome problems faced in everyday life, including academic achievement which is their main task.

Sobur's [14] theory on academic achievement and Goleman and Boyatzis [16] on emotional intelligence. According to Sobur [14] academic achievement is evidence of the business results obtained by students while attending lectures as seen through the cumulative achievement index. The results of the student's achievements are expressed in the form of numbers or symbols to determine the extent of the student's academic achievements. High academic achievement illustrates high absorption, and vice versa. Therefore, the achievements achieved indirectly become a prediction for individual success and a reflection of quality individuals. According to Ahmadi and Supriyono [9] the factors that influence academic achievement are internal factors or factors from within the individual and external factors or factors that come from outside the individual. Internal factors that affect academic achievement according to include physiological factors and psychological factors. Physiological factors are body health and the functioning of the five senses, especially sight, hearing, and mental health. Psychological factors are potential factors that include intellectual and talent, as well as real everyday skills.

It should also be found in student activists. Goleman and Boyatzis [16] states that emotional intelligence accounts for 80% of the determinants of a person's success, while the other 20% is determined by Intelligence Quotient (IQ). Goleman found that many people who fail in life are not because of low intellectual intelligence, but can be caused by a lack of good emotional intelligence. Goleman defines emotional intelligence as a set of personal, emotional and social abilities that affect a person's ability to cope with environmental demands and pressures. Activist students who take shelter in campus student organizations are expected to have high self-motivation to improve academic and organizational achievement, have resilience in dealing with

problems, control emotions so as not to exaggerate pleasure and prolong sadness, regulate mental state and keep burdensome at bay. Stress does not paralyze the ability to think, empathize and build relationships with others. The higher a person's emotional intelligence, the higher the academic achievement. Vice versa, the lower a person's emotional intelligence, the lower the academic achievement.

Various efforts and activities carried out by all components of the nation within the framework of the life of the country and state, including activities in the field of education should be a joint effort and make a real contribution to realizing the national goals as stated in the preamble to the 1945 Constitution, namely protecting the entire nation and the entire homeland of Indonesia, promote public welfare, educate the nation's life, and participate in carrying out world order based on freedom, eternal peace and social justice. The world of education, especially higher education is expected to prepare superior humans who can think critically, creatively, innovatively, productively and competitively. In an effort to fulfill this task, higher education as stated in Article 14 of Law Number 12 of 2012 concerning Higher Education, is carried out through curricular, co-curricular and extra-curricular activities.

2.3 Student Achievement

Student activities (ko and extra-curricular), currently have an important position considering that these activities are carried out to instill soft skills which are increasingly seen as important to provide students to meet the demands of the world of work. Today, the world of work in the industrial world in recruiting workers gives high weight to these soft skills. Especially in the following soft skills: people skills, problem-solving, communication skills, teamwork and collaboration skills, creativity, integrity and other soft skills [17].

The academic achievements written in this study are the championship achievements achieved by students both according to their scientific fields and non-academic outside the Cumulative Achievement Index (GPA). Types of achievements based on the guidance of the Student Achievement Rating System (SIMKATMAWA) both according to the scientific field and outside the scientific field from the Ministry of Education and Culture of the Republic of Indonesia include: 1) Activities organized by BELMAWA both individually and in groups and those who get ranking points at the national level include 1st, 2nd, 3rd place winners and winners expectations, funded PKM grants, national, regional participants, finalists in competitions. 2) International level championships, meaning championships held at the international level, both individuals and groups who get ranking points, namely 1st, 2nd, 3rd and hopeful champions, 3) National level championships, activities and or competitions held at the national level, both individuals and groups. , who get ranking points are the 1st, 2nd, 3rd and hopeful winners. 4) Regional/regional championships, activities or competitions held at the regional/regional level both individuals and groups who get points are 1st, 2nd, 3rd and hopeful winners. 5) Provincial championships, competitions or competitions carried out at the provincial level, both individually and in groups, who get ranking points are 1st, 2nd, 3rd and hopeful winners. 6) Student entrepreneurship in the form of the number of titles and the number of students who do entrepreneurship both individually and in groups. 7) Exchange of students, both inbound and outbound, who get ranking points at the international and national level, 8) Community service includes the number of titles and the number of students involved in service, whether organized by lecturers or Student Institutions (LK) or Student Activity Units (SME). 9) Recognition, student achievement that gets ranking points including student acquisition/involvement in the form of Copyright/Book Patents, international trainer judges, national judges/trainers, seminar/international conference speakers (number of paper titles), national seminar speakers (number of paper titles)), international and national exhibitors 10)

Participation/delegation/championship participants who get ranking points are provincial, regional, national and international levels. 11) Organizing championship activities. Students are the organizers of competitions/competition events, and those who get ranking points are at the provincial, regional, national and international levels. 12) Appreciation, which is meant here is a student who succeeded as a finalist in a competition, which is recognized and gets ranking points at the provincial, regional, national and international levels.

Making the student achievement record system application needs to pay attention to various types of student achievements that have been included in the SIMKATMAWA guide with the following steps: 1) Identification of all types of achievements, 2) Preparation of achievement reporting SOPs, 3) Application design included in the FE website menu by IT team, 4) Determining input operators, 5) Determining system access personnel, testing the feasibility of the system, 6) Obstacles encountered and re-testing, 7) Socializing the achievement recording system, and 8) Continuous system implementation and system valuation.

3 Method

The research of study is the ADDIE development model. The ADDIE development model is a programmatically structured model with a systematic sequence of activities in to solve product development problems [18]. According to Barokati and Annas [19], the ADDIE Model stands for Analysis – Design – Development – Implementation – Evaluation. The instrument used to collect data is an expert validation sheet. An expert validation sheet is an instrument used to obtain data about the validity of the developed product. This validation is carried out by media (product) experts. After getting assessment data from media experts (application system), the data is analyzed descriptively to determine the feasibility of the developed system. Data collection instrument with attractive design indicators, appropriate colors, appropriate component locations, appropriate sizes, easy and convenient to use. The data analysis technique used is expert validation data analysis. Analysis of the data used is a quantitative descriptive analysis technique.

4 Result and Discussion

4.1 Student Achievement Recording Application Design

The Student Achievement Recording System, abbreviated as SIPRESTA, is an application that is proposed in order to integrate various activities and achievements at the Faculty of Economics, UNNES. This disability system can be accessed through the website of the Faculty of Economics at www.fe.unnes.ac.id. The menu display and features are as follows in fig. 1:



Fig. 1. The Menu Display and Features

To access the system, users, including lecturers, education staff and students, can directly click SIPRESTA. After that comes the features of seven achievement categories, with the following details in table fig. 2:

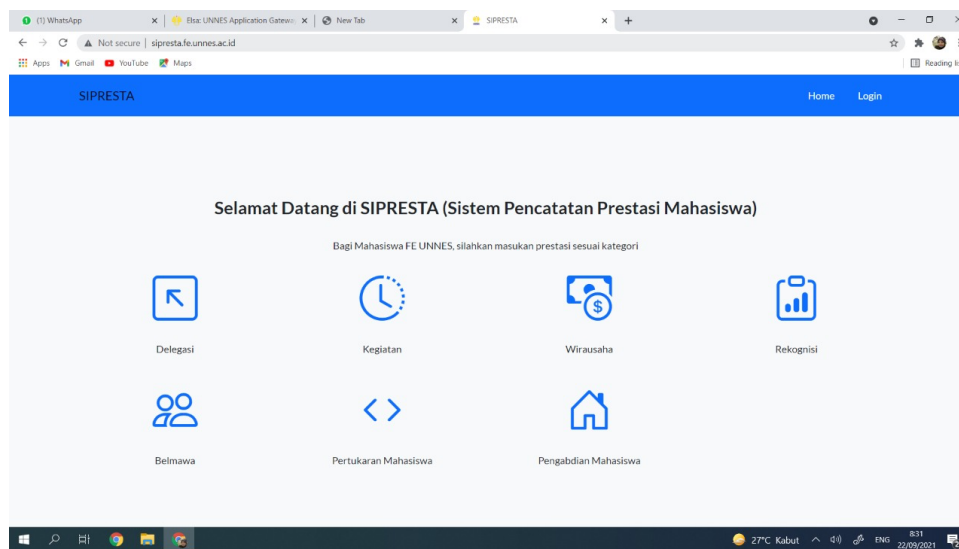


Fig. 2. The Features of Seven Achievement Categories

Students of the Faculty of Economics who have achieved achievements are required to input according to the type of achievements they have obtained including:

- a) Academic and non-academic championships (delegation menu)

- b) Activities (LK/UKM/Students as event organizers (provincial, national, regional and international levels)
- c) Student Entrepreneur
- d) Recognition (IPR, international conference presenters, etc.)
- e) Belmawa (the championship was obtained by students who took part in the implementation of the Directorate General of Higher Education and Belmawa of the Ministry of Education and Culture of the Republic of Indonesia)
- f) Student exchange (number of inbound and outbound students)
- g) Student service (number of student services, both students involved in lecturer service and the service activity itself)

One of the categories contains input items with the following steps:

- a) Enter category
- b) Enter the name, student ID number and major
- c) Student phone number
- d) Ranking of competitions/competition
- e) Photo of the certificate (upload file in pdf/jpg format)
- f) Championship name
- g) Championship level
- h) Execution time
- i) Competition/competition assignment letter (upload file in pdf/jpg format)
- j) Activity URL link

The features in the SIPRESTA system are as follows in fig. 3:

Fig. 3. The Features in the SIPRESTA System

The appearance of the application design includes the types of achievements used based on the SIMKATMAWA guidelines of the Ministry of Education and Culture of the Republic of Indonesia, there are 12 types. This type of achievement appears in the application's initial menu,

then the preparation of SOP, compiled briefly and easily understood by the academic community of the Faculty of Economics, UNNES. The SOP is displayed in the application's start menu. Furthermore, achievement reporting is carried out by students of the Faculty of Economics who take part in competitions/activities, which include the name of the student, Student Identification Number (NIM), study program, name of the competition, time and place of implementation, level of competition, assignment letter or activity leaflets, link to the organization. Activities, photos of the championship, certificates, supervisors, and articles or works that are contested.

The design of the SIPRESTA application is included in the FE website menu by the IT team in collaboration with the Public Relations Unit of FE UNNES. The determination of the input operator is determined based on the leadership's decision with the criteria that there are elements of education staff, student assistant lecturers, students participating in the competition. Determination of personal access to the system, is determined based on the decision of the leadership both from the elements of lecturers, education staff and students. System feasibility testing, carried out after the application is complete, the team has agreed upon the content. Participants in the system trial were leaders, lecturers, education staff and students. If you experience several obstacles, input and criticism are needed for the application of system applications after the test is carried out, both obstacles faced by operators and system users. These constraints are used as a guide to improve and then try again. After the second trial, socialization of the achievement recording system was carried out, with the aim of users understanding how to operate the system. After that, the implementation of the achievement recording system is carried out and then a continuous system evaluation is carried out regularly and periodically every quarter.

5 Conclusion

The application design includes an initial menu. There are 12 types of achievements displayed and the appearance of input procedures for both operators and students is compiled briefly and easily understood by the FE UNNES academic community. Furthermore, reporting on achievements is carried out by FE students who take part in competitions/activities, which are reported to consist of the student's name, Student Identification Number (NIM), study program, name of the competition, time and place of implementation, level of competition, assignment letter or activity leaflets, link to the organization activities, photos of the championship, certificates, supervisors, and articles or works that are contested. The application design is entered in the FE website menu by the IT team. Judgement of input operators, determination of system access personnel, system feasibility trials, obstacles encountered, re-testing, socialization of student achievement recording systems, system implementation and continuous system evaluation.

6 Acknowledgement

The authors would like to thank Universitas Negeri Semarang for its financial support. In addition, the authors would like to thank all parties involved in the preparation of this research.

Reference

- [1] A. Susilo *et al.*, “Coronavirus disease 2019: Tinjauan literatur terkini,” *J. Penyakit Dalam Indones.*, vol. 7, no. 1, pp. 45–67, 2020.
- [2] Direktorat Promosi Kesehatan dan Pemberdayaan Masyarakat Kemenkes RI, “Menuju Adaptasi Kebiasaan Baru,” 2020. <https://promkes.kemkes.go.id/menuju-adaptasi-kebiasaan-baru> (accessed May 04, 2021).
- [3] N. J. L. Fitria, “Penerapan Work From Home Dan Work From Office Dengan Absensi Online Sebagai Implikasi E-Government di Masa New Normal,” *Civ. Serv. J.*, vol. 14, no. 1 Juni, pp. 69–83, 2020.
- [4] Kamus Besar Bahasa Indonesia, *Kamus Besar Bahasa Indonesia*. Jakarta: Balai Pustaka, 2018.
- [5] A. . Sardiman, *Interaksi dan Motivasi Belajar Mengajar*. Jakarta: PT. Raja Grafindo Persada, 2001.
- [6] M. Syah, *Psikologi Pendidikan*. Bandung: PT. Remaja Rosdakarya, 2001.
- [7] Suryabrata, *Psikologi Pendidikan*. Jakarta: PT. Raja Grafindo Persada, 2006.
- [8] A. Hipjillah and N. Badriyah, “Mahasiswa Bekerja Paruh Waktu; Antara Konsumsi dan Prestasi Akademik (Studi Pada Mahasiswa Bekerja Paruh Waktu di Uno Board Game Cafe),” *J. Ilm. Mhs. FEB*, vol. 3, no. 2, 2016.
- [9] H. A. Ahmadi and W. Supriyono, “Psikologi belajar,” 2004.
- [10] H. E. Gardner, *Frames of mind: The theory of multiple intelligences*. New York: Basic Books, 1983.
- [11] L. E. Shapiro, *Mengajarkan Emosional Intelligence pada Anak*. Jakarta: PT Gramedia Pustaka Utama, 2003.
- [12] P. Patton and Z. Dahlan, *EQ di tempat kerja*. Pustaka Delapratasa, 1998.
- [13] I. Dapsari, “Perbedaan Kecerdasan Emosi pada Mahasiswa Eksakta dan Non Eksakta di UGM,” *Skripsi. Tidak diterbitkan. Yogyakarta Fak. Psikol. UGM*, 2001.
- [14] A. Sobur, *Psikologi Umum*. Bandung: PT. Pustaka Setia, 2006.
- [15] D. Goleman, *Emotional Intellegence*. Jakarta: PT. Gramedia Pustaka Utama, 2009.
- [16] D. Goleman and R. Boyatzis, “Emotional intelligence has 12 elements. Which do you need to work on,” *Harv. Bus. Rev.*, vol. 84, no. 2, pp. 1–5, 2017.
- [17] Direktorat Jenderal Pendidikan Tinggi Kemdikbud RI, “Panduan Sistem Informasi Manajemen Peningkatan Kemahasiswaan (SIMKATMAWA),” 2021. <https://dikti.kemdikbud.go.id/wp-content/uploads/2021/04/Panduan-SIMKATMAWA-Tahun-2021.pdf> (accessed May 06, 2021).
- [18] I. G. H. Prastya, K. Pudjawan, and I. K. Suartama, “Pengembangan Multimedia Pembelajaran Interaktif Mata Pelajaran Bahasa Indonesia dengan Model ADDIE Untuk Siswa Kelas VII Semester Genap Tahun Pelajaran 2014-2015 Di SMP Negeri 1 Banjar,” *J. Edutech Undiksha*, vol. 3, no. 1, 2015.
- [19] N. Barokati and F. Annas, “Pengembangan Pembelajaran Berbasis Blended Learning pada Mata Kuliah Pemrograman Komputer (Studi Kasus: UNISDA Lamongan),” *SISFO Vol 4 No 5*, vol. 4, 2013.