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# Proceedings of the International Conference on Research and Academic Community Services (ICRACOS 2019)

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Welcome to the International Conference on Research and Academic Community Services (ICRACOS 2019) at the Institute of Research and Community Services, Universitas Negeri Surabaya, Indonesia. This conference will take place in Surabaya, Indonesia, on September 7, 2019. The conference is organized by the Institute of Research and Community Services, Universitas Negeri Surabaya with funding support from the directorate general of research and development of the Ministry of Research and Technology in the 2019 fiscal year in the scheme of international scientific conference assistance. Commitment to readiness to meet the new era has

been attempted and materialized in the theme raised in this seminar, namely research and its application to meet the industrial era 4.0.

Please click [here](#) for the conference website.




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**Assalamualaikum Wr. Wb**

The honorable Prof. Dr. H. Nurhasan, M.Kes as Head of Surabaya State University and the representative. The honorable Prof. Dr. Darni, M.Hum. as head of Research and community service institute. The honorable presenters both from within and outside the country, and The honorable ladies and gentlemen who attended the international seminar this morning. First of all, let us give thanks to the presence of Allah SWT, Almighty God, so that we can jointly take the time and ease the steps to attend this international seminars organized by research institutes and community service with the theme "research and its application to meet the industrial era 4.0. "

This seminar is an international-scale seminar that presents speakers from several countries including Pakistan, Gambia, Malaysia, Japan, Taiwan and Indonesia. We are grateful that our ideas have received very good responses from public as indicated by 173 (one hundred and seventy three) speakers from home and abroad. In this seminar, we present 4 keynote speakers whom we know have a very good reputation in their fields. They are: Prof. Jing-Wen Lin, from the National Taipei University of Education, Taipei, Assoc; Prof. Kuniyoshi Shimizu, from Kyushu University; Prof. Dr. Ir. Suhono H. Supangat, M.Eng. from Bandung Institute of Technology and Indonesia Railroad Commissioner, Indonesia, and Prof. Dr. H. Muchlas, M.Pd. from Surabaya State University, Indonesia. For this seminar held by LPPM Surabaya State University, we thank you for all of your support.

Finally, if there are any words that are not pleasing in the hearts of all, we deeply apologize. Welcome to attend the ICRACOS 2019 seminar and a series of supporting activities. Hopefully what we do today will benefit our progress in the future.

Conference Chair

Prof. Dr. Titik Taufikurohmah, M.Si

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## Proceedings Article

### Digital Workplace Implementation To Promote Gender Equality

Nita Yalina

The focus of this research is to provide an explanation of how the digital workplace can help to promote gender equality in the organization. We conduct interviews with 4 managers and 8 selected woman on different organization regarding expected condition at the workplace. In the Organization perspective,...

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### Proceedings Article

## The Anatomy of Informed Consent that Provides Legal Protection for every Party

Agus Yuda Hernoko, Ghansham Anand, Antonius Gunawan Dharmadji, Chesa Ramadhan

A doctor-patient relationship relies on two kinds of basic individual rights; right of self-determination and right to healthcare. These basic rights derive from patients' rights to get information about their medical condition. This study discusses the importance of informed consent for any parties...

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### Proceedings Article

## Literature Review: The Importance of Adding Sharia Economic Material to Economic Subjects in Senior High Schools

Hakim Luqman, Anwar Moch. Khoirul, Pahlevi Triesninda, Pratiwi Vivi, Kurniawan Riza Y

This study aims to analyze the importance of adding sharia economic material to economic subjects in Senior High Schools, especially in Science Department. The type of this research is literature review research by

examining various journals and previous theories. The results showed that the sharia economic...

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### **Proceedings Article**

## Upcycling Wedding Gowns: Development Of Design, Materials And Ornaments

Ratna Suhartini, Juhrah Singke, Aldia Danardewi

This study aims to analyze: a) upcycling of bridal gowns in terms of design development, material uniformity, decoration and upcycling feasibility. This type of research is research exploration. Research procedures include a) problem collection, b) Gathering wedding gowns, c) developing wedding dresses...

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**Proceedings Article**

## Democratic Practices and Youth Political Participation in Khyber-Pakhtunkhwa, Pakistan

Muhammad Saud, Rachman Ida, Musta'in Mashud

The present study focused on youth political participation in the democratic practices in the Province of Khyber Pakhtunkhwa (KPK), Pakistan. The study deployed the main theory of Jürgen Habermas 'The Public Sphere', this theory indicated that people use to discuss their social and political matters...

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**Proceedings Article**

## Analysis of the learning style of college student athletes for preparation of distance learning

Kunjung Ashadi, Imam MARSudi, Yonny Herdyanto, Gigih Siantoro

Every individual has a different learning style. By knowing the learning style, an approach can be chosen that fits each of these learning styles. The purpose of this study was to find out the learning styles of students from athletes who performed well at provincial, national and international levels...

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**Proceedings Article**

## Fashion Student Skill as Millennial Entrepreneur

Ma'rifatun Nashikhah, Mochammad Bruri Triyono

Fashion student in Senior Vocational High Schools (SMK) are middle schools

that prepare their graduates for working in certain field of work. This research to know fashion skill student prepared their skill as the graduate school not depend on position as industry and services but it is possible can...

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## Proceedings Article

### Factors Influencing Indonesia Coffee Exports Volume

Sucihatningsih Dian Wisika Prajanti, Suwito Eko Pramono, Fauzal Adzmin

This study aimed to analyze factors influencing coffee exports volume in Indonesia. The study belonged to quantitative research with secondary data of time series in the period of 1983-2017. For more, the technique of analysis employed in this study was Multiple Linear Regression Analysis with Ordinary...

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**Proceedings Article**

## Experimental Investigation of Double Layer Blades as Obstacle Blades on Savonius Wind Turbine Performance

Indra Siregar, Moch Effendy, Akhmad Rasyid

Utilization of wind energy potential in Indonesia is still small due to the range of wind characteristics in Indonesia frequently changing direction change and its average speed is also categorized low. For that we need to develop high-efficiency wind turbines at low wind speeds. In this research, a...

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**Proceedings Article**

## Threat of Stunting in Early Childhood

Cindi Ambar Puspitasari, Puji Yanti Fauziah

Stunting is a height index according to age below minus two standard deviations based on WHO standards (World Health Organization). Stunting is a problem in early childhood which is very worrying in developing countries. Stunting is a form of growth failure due to the accumulation of nutritional insufficiency...

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**Proceedings Article**

## Ecowa Common Trade Policy: Challenges And Opportunities – Gambia And Nigeria

Sunkung Danso, Silas Emovwodo, Muhammad Saud

The present study discussed the ECOWAS common trade in member countries indicates greater optimism in adoption of single currency. ECOWAS Common Trade Policy is an essential tool for the member countries to eliminate all forms of trade barriers to foster growth and development. This paper took the form...

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### Proceedings Article

## Islamic Business Ethics on Customer Retention

Regina Suhandi, Arasy Fahrullah

The aim of this research is to test the effect of islamic business ethics that consist of unity/tauhid, equilibrium, free will, responsibility, and truth towards customer retention of BMT UGT Sidogiri Cabang Tanah Merah Bangkalan. This research was conducted with an associative quantitative approach....

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**Proceedings Article**

## Indonesian Students' Reading Literacy

Sri Wijayanti

Reading is supposed to be an activity frequently performed by university students. However, not all students are fond of reading, particularly in the digital era. This study aims to identify students' reading literacy both in their family and their campus and determine whether campus library maximally...

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**Proceedings Article**

## Sustainable Batik Production: Review and Research Framework

Indarti, Imami Arum Tri Rahayu, Li Hsun Peng

Batik is one of the works of ancient art in some countries. This art has become closely associated with the identity of Southeast Asia particularly Indonesia. We define sustainable batik production as a batik production process that is non-polluting, conserving energy and natural resources, economically...

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**Proceedings Article**

## Community-Based Integrated Coastal Management Strategy in Tugurejo Subdistrict, Semarang

Nana Kariada Tri Martuti, Rudhi Pribadi, Wahid Akhsin Budi Nur Sidiq, Dhita



Prasisca Mutiatari

Community involvement has an important role to maintain and manage the coastal area of Semarang. The involvement includes program preparation, implementation and monitoring so that the community feels responsible for the rehabilitation and maintenance of the environment. The purpose of this study is...

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#### Proceedings Article

## The Strategy of Product Quality Improvement on Small Business Coffee Sales Performance

Musdholifah Musdholifah, Ulil Hartono, Harti Harti

Product quality is considered significant in improving sales performance. East Java is the second largest coffee producing province in Indonesia after Sumatra. Most are small businesses coffee farmers who are able to produce quite good quality coffee although on a small scale. However, the product quality...

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#### Proceedings Article

## Empowering Women through Batik Training in Dolly's Ex-Localization Area

Aniendya Christianna, Mariana Wibowo, Poppy Firtatwentyna Nilasari

A lot of batik trainings have been done by the Surabaya city government, but batik craftsmen have never received training in the creative process of

producing batik motifs. They do not have the confidence to draw their own batik motifs. During this time, they only imitated existing images (from television,...

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### Proceedings Article

## The Effect of Dysmenorrhea and Anxiety on Agility With Moodstate as Intervening Variable

Novita Prahastini, Nurhasan, Miftakhul Jannah, Bayu Budi Prakoso

Dysmenorrhea is a disorder during menstruation. Dysmenorrhea can reduce student participation in class, concentration in class, sports participation, socialization and test taking skills. For PE teachers, the incidence of menstruation in students is enough to bring solutions to learning. Those who are...

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### Proceedings Article

## Improving the ability of literation, collaboration, democracy attitude, and high level thinking ability with learning based on theory of constructivism

Mustaji, Kristanto, Arianto, Masruro

The ability of literacy, collaboration, democratic attitudes, and higher-order thinking skills is very important for students, but has not been taught optimally in college. Previous research shows that the implementation of constructivist learning theory has the potential to improve literacy, collaboration,...

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### Proceedings Article

## Management of Cooperatives in Improving Financial Performance in East Java, Indonesia

Eni Wuryani

The purpose of this study is to analyze cooperative management in improving financial performance in East Java, Indonesia. Cooperative management in this study includes internal control, and the implementation of the annual member meeting (AMM). Financial performance is measured by a report on the calculation...

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### Proceedings Article

## The Validity and Reliability of Cognitive Tests for Decision Making on Soccer Players

Ali Imron, Wijono, Miftakhul Jannah, Setyorini

the ability to make decisions becomes an important cognitive skill possessed by soccer players. Practicing tactical awareness is an effective alternative in improving the ability to make decisions. And it has become a habit of a lot of soccer practice, these skills are trained through practice in the...

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## Nanocrystalline Titanium Dioxide Nanotube (TDN) by Hydrothermal Method From Tulungagung Mineral Sand

Lydia Rohmawati, Istiqomah, Entang Wulancahayani, Ajeng Haefdea, Woro Setyaningsih

This research is focused on extraction titanium dioxide nanotubes from Tulungagung mineral sands using the hydrothermal method. Extraction is done by dissolving mineral sand into sulfuric acid solution and vacuums pump to obtain TiO<sub>2</sub> precipitate. Furthermore, TiO<sub>2</sub> precipitate were calcined at 600° C...

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### Proceedings Article

## The Readiness of Economy Education Students for the Employment Market of the 4th Industrial Revolution

Susanti, Harti, Vivi Pratiwi, Han Tantri Hardini

This study aims to describe the level of readiness of students majoring in Economic Education at the Faculty of Economics, State University of Surabaya in dealing with the world of work in the era of the 4th industrial revolution when viewed from the self-efficacy's factor. The type of this research...

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### Proceedings Article

## Students' Perception Toward the Implementation of Project Based Learning for EFL Vocational High School.

Arik Susanti, Pratiwi Retnaningdyah, Anis Trisusana

This study focused on the students' perceptions toward the implementation of Project Based Learning in learning English as a Foreign Language that was conducted in one public of vocational high school in Surabaya Indonesia. The research was mixed method that used quantitative and qualitative data. The...

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### Proceedings Article

## Study Of Social Exchange From TB Care Community Aisyiyah In Early Detection Of Tuberculosis Suspect In Surakarta

Hetty Ratnawati, Sutopo JK, Mahendra Wijaya

Indonesia is currently the fourth most burdened tuberculosis (TB) country out of 22 countries with highest TB burden in the world. Community TB Care Aisyiyah as one of the communities concerned with the problem of tuberculosis is expected to further enhance the findings of TB sufferers so they can be...

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### Proceedings Article

## Manufacture of Unesa's Aerobic Dance

Nur Ahmad Arief, Nurhasan, Kunjung Ashadi

Unesa aerobic dance have different characteristics from other models. The advantages of this include the movement pattern that is in line with the development of a more energetic era, which makes the participants more enthusiastic in participating, music follows an energetic and trending beat

pattern...

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#### Proceedings Article

### An introductory book for coaching athletes with a disability

Khusnul Khotimah, Kunjung Ashadi

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Darni, Ubaidillah

The purpose of this study generally is to describe the role of Muslimat and Fatayat (an organization of Muslim women) in forming an egalitarian family. Specifically, this study discusses the role of Muslimat and Fatayat NU and gender in forming an egalitarian family. Both of these problems were approached...

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Suyatno Sutoyo, Tukiran, Nur Indah Kumala Sari

The aims of this research is to determine mucolytic activity of methanol extract of silver fern (*P. calomelanos*). In this research extraction was carried out by maceration method. Qualitative test was done by ferric chloride reagent and Shinoda test to identify the existance of phenolic and flavonoid...

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Mega Swastika Junior, Drajat Tri Kartono, Ahmad Zuber

Songkro dance is a new dance that blends traditional and contemporary motion art which is arranged in interesting and unique gestures. Songkro itself is the name of the tool used by sand miners on the banks of the Brantas River, Kediri, and East Java. Songkro is made of woven bamboo that is shaped like...

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Titik Taufikurohmah, Djodjok Soepardjo, Rusmini, Hari Armadianto

Cluster diameter analysis of the results of nanomaterial synthesis can be done using UV-Visible instruments with complex mathematical calculations. Another way is to use the Transform Electron Microscope (TEM) instrument directly. Both have advantages and disadvantages of each. This research compares...

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### The Content of Coli Bacteria In Shallow Well Water In Surabaya Small Type Housing Is Very High. Why?

E. Titiek Winanti, Indiah Kustini

This research is motivated by the fact that the quality of groundwater in small type housing in Surabaya is low, with a high content of E-Coli bacteria. By this fact, it is necessary to study what factors are causing the high content of E-Coli bacteria. Continuing the previous research as a target of...

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### Building the Character of Elementary School Students through Javanese Language Learning

Yunita Ermawati, Darni, Surana, Murdiyanto, Sugeng Adipitoyo

Education is still considered as a pillar for young generations in undergoing a millennial era. Intellectual and character are a complete package that must be had by young generations in undergoing the millennial era. So in other words,



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### Analysis of Green Open Space in Krembangan, Surabaya City

Sri Murtini, Agus Sutedjo, Ita Zain

There are plenty of Green Open Spaces in Surabaya, East Java, Indonesia such as in Krembangan Subdistrict that needed to know its condition. This research aims to identify the type of green open space including its classification. The research method is used by compiling primary and secondary data by...

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Nining Widyah, Suminar Jajang, S.P Bird

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## Integrating the Hypothetical Learning Trajectory with Realistic Mathematics to In-Service Teachers' Professional Development

Rooselyna Ekawati, Atik Wintarti, Abadi, Ika Kurniasari

This study aimed at integrating the notion of Hypothetical Learning Trajectory (HLT) of teaching mathematics with Realistic Mathematics approach to in-service teachers' Professional Development. We constructed a teachers' training program to develop teachers' understanding on designing mathematics lesson...

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## Validity of Investigation Based Scientific Collaborative (IBSC) Learning Model To Facilitate Students' Communication and Collaboration Skills

Peni Suharti, Muslimin Ibrahim, Yuni Sri Rahayu

Communication and collaboration are skills that needed in the 21st century, and also including as one of the science process skills and generic skills that students must possess. This development research aims to 1) develop an Investigation Based Scientific Collaborative (IBSC) learning model to facilitate...

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## Analysis of the Company's Performance Based on Method of

## Economic Value Added

Anita Nisa Kambey, Novalita Silinaung

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Wenly RJ Lolong

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## Consistency and Relevance of Structured Lecture Materials in Physical Chemistry 3 Subjects

Suyono, Harum Nasrudin, Bertha Yonata

The purpose of the study was to produce a Physical Chemistry 3 (PC3)

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## Study of Social, Ethical Woman in Fairy Tales for Children

Wahyu Sukartiningsih, Neni Mariana, Maryam Isnaini Damayanti

The research is based on the identity of a woman's life. Appreciation and recognition of a woman's identity is very important to instill in children. The aim of this study was formulated with a general goal, which is to describe the social ethical aspects of women in fairy tales for children. This research...

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## Implementation of e-Learning Modules in Viola Instrument Course-Indria Level Practical Learning

Harpang Karyawanto, Heri Murbiyantoro, Moh Sarjoko

The development of e-learning is a form of quality improvement undertaken to achieve effective learning. The Music Department, as one of the study programs at Universitas Negeri Surabaya, has two types of courses, namely theory and practice. The purpose of this study is to develop e-learning learning...

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## Graded Readers in Indonesia: A Review

Pratiwi Retnaningdyah, Kisyani Laksono, Martadi, Raras Tyasnurita, Ahmad Bayu Prastyo

Book leveling system is indispensable to prepare children to become life-long readers. In literacy learning, children read books according to their level of reading competence, and graded readers help teachers and parents select books that suit children's reading level. To enhance School Literacy Movement,...

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## Developing Teacher's Handbook to Enhance Social Interaction

## of Children with Autism in an Inclusive Primary School

Sartinah Endang P, Andajani Sri J, Anggraini Lisdiana Dewi Putri

This study specifically aims 1) to produce a teacher's handbook in social personal guidance with role playing techniques to enhance social interaction of children with autism in Inclusive Primary Schools, 2) to examine the feasibility of the teacher's handbook in social personal guidance with role playing...

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Bambang Yulianto, Syamsul Sodiq, Prima Vidya Asteria

Reading comprehension is one of the main components in the mastery of information literacy competencies. This study discusses the importance of standardization of reading comprehension measurement instruments that aim to obtain objective measurement test results. Instrument development is carried out...

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## Learning Need Assessment: Formulating Blended-Learning as Academic Services for Student-Athletes

Anung Priambodo, Agus Hariyanto, Vega Candra Dinata, Kolektus Oky Ristianto, Bayu Budi Prakoso

There is no other way to succeed in many ways except to do more business. That is what happens to student-athletes who study at Physical Education Teacher Education (PETE). They must perform optimally as athletes, as well as success in learning to achieve maximum academic achievement. For this reason,...

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## Consumer Acceptance and Preference on Rambuta Seed Food Products Development

Meda Wahini, Meinis Sondang Sumbawati, P. R Wikandari

Consumer acceptability and preference was associated with consumer perception toward food innovations. Generally, innovation food product utilized a potentially byproduct foodstuff such as rind and seed derived from high productivity fruit. One of underutilized by-product which has beneficial nutrition...

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## Validity of E-Learning Module in Genetic Courses as One of The Technology Information Based Learning Innovations

Trimulyono Guntur, Isnawati

Information technology is currently growing rapidly with great benefits. Learning in the classroom will be very efficient and effective when using of information technology. In the genetic course is expected to be able to implement virtual learning as an innovation course. This study aims to

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**Arsana I Made, Susila I Wayan, Cholik Mochamad**

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Indonesia is a country that is famous with variety of culinaries, one of them is meatballs. Meatballs are processed foods from beef with a mixture of tapioca flour in a round shape. Meatballs can be found easily as foodstreet or even restaurant's menu. In producing the meatballs, manual method is still...

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## Between Mathematics Student Self-Efficacy in Teaching at International School

**Palupi Evangelista Lus Windyana, Putri Hani Rizkia, Yonata Bertha, Sari Dhita**

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**A P, Jauhariyah Mukhayyarotin N R, Basri Ahmad, Hidayah Rusly**

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This study is aimed to find out the relation of student teachers' English proficiency and their self-efficacy in teaching at international school.

Students' English proficiency is based on two aspects: students English proficiency score and their self-efficacy in English comprehension. In order to measure...

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## The Implementation Of Media Detector In Track Running Sport Learning For Visually-Impaired Student In Special Needs School

Sri Andajani, Oce Wirawan, Pamuji Pamuji

The purpose of this research is to describe the application of media detector in track running sports learning for visually-impaired students in special needs school. Educational Research Development (R&D) Gall, Gall and Borg (2003) is applied in this study. Prototype media detector product in track...

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## Forecasting of Childhood Pneumonia in Semarang City

Widya Cahyati, Merlinda Sari

The number of cases of under-five pneumonia in Semarang City recorded at Semarang City Health Office in 2018 was 6,477 cases, a decrease compared to 2017 at 9,586 cases. This study used under-five pneumonia cases in Semarang City as one of the variables to determine the results of ARIMA (Autoregressive...

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# The Strategy of Product Quality Improvement on Small Business Coffee Sales Performance

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**Abstract**— Product quality is considered significant in improving sales performance. East Java is the second largest coffee producing province in Indonesia after Sumatra. Most are small businesses coffee farmers who are able to produce quite good quality coffee although on a small scale. However, the product quality of small businesses is still unable to compete with the larger coffee industry. The constraints faced by small coffee businesses in East Java are the lack of knowledge about marketing management, especially about building product quality so that it is attractive to be widely marketed and increasing sales performance. This research is a qualitative study conducted on coffee farming groups in East Java with samples of coffee farmers in Pasuruan, East Java. This study aims to find the right strategy to improve product quality to increase sales performance. This study has implemented the PDCA cycle method (Plan, Do, Check, and Action) in which, focus group discussions (FGD) were carried out in the process. The results showed that after the implementation of the PDCA method, it was known that the improvement in the production process could improve product quality, thus increasing the sales performance by 15 percent.

**Keywords**—Product Quality Improvement, Sales Performance, Small Business, Coffee, PDCA

## I. INTRODUCTION

Coffee is one of the world's commodities that carry the name of Indonesia, especially Java. In world coffee, a cup of coffee has termed a cup of java. Indonesia (especially Java) since the Dutch era is known as the best-flavored coffee producer in the world. [1] Coffee farming in East Java Province, Indonesia, contributes quite well to supplying coffee needs in East Java particularly and in Indonesia generally. Besides, coffee is also one of Indonesia's export commodities. In addition, there is currently an increase in coffee demand due to the growth of cafes in Indonesia, especially in big cities whose markets are quite wide. The Association of Indonesian Coffee Exporters and Industries (AEKI) said the growth of national coffee consumption increased from 0.8 kilograms per capita to 1.3 kilograms per capita. [2]

Broadly speaking, the Indonesian coffee industry is classified into three business scales, i.e. small-scale processed coffee industry (smallholders), medium-scale processed coffee industry and large-scale processed coffee industry (estates/government-owned plantation). [3] At present, about 95% of the coffee area & production in Indonesia is coffee from small businesses (smallholders coffee), while the rest is from large-scale coffee plantations (estates coffee). East Java is the second largest coffee producing province in Indonesia after Sumatra. Most are small businesses coffee farmers who are able to produce good quality coffee although on a small scale. However, due

to the small scale production capability, these small business farmers are only able to supply the needs of local markets in the nearby area, both in the form of whole green coffee bean, roasted bean and ground coffee. Nevertheless, the coffee produced by small businesses has advantages, which is, the coffee is pure and without a mixture of other ingredients, so this is enough to attract the cafe businessman to get a supply of pure coffee from these small coffee businesses. Thus, there is a considerable opportunity for small coffee businesses to supply coffee demand that continues to increase.

However, this considerable opportunity is not matched by the ability to produce quality coffee products, so that coffee produced by small businesses is still unable to compete with large-scale factory-produced coffee products. The constraints faced by small coffee businesses in East Java are the lack of knowledge about marketing management, especially about building product quality so that it is attractive to be widely marketed. From observations on small coffee businesses in East Java, the results showed that their coffee products were still of lesser good quality. For this reason, assistance from experts is needed to help the farmers of the small coffee business to improve the quality of their products so that sales performance increases so as to improve the welfare of the farmers. Departing from the background of the above problems, the purpose of this study was to develop product quality improvements to improve the performance of coffee sales in small coffee businesses in East Java.

## II. LITERATURE REVIEW

### A. The Importance of Improving Product Quality

In the coffee business, there are many attributes that underlie consumers in choosing coffee products, including aroma, flavor, availability, price, packaging material, packaging design, packaging size, shelf life, label design, and so on. Attributes that are the main priority of consumers in general, outside the urban elite, in deciding on purchases are price and product availability. Another important attribute, especially for urban elites is the quality of the coffee by looking into its taste and aroma. [4]

Quality can be defined broadly as superiority or excellence. In terms of objective quality, it can be defined as measurable and verifiable superiority on some predetermined ideal standard or standards. [5] The Government has imposed mandatory Indonesian National Standards (SNI) for instant coffee products. The rule applies to instant coffee circulating in the Indonesian market, both imported and locally produced. Compulsory SNI applies to coffee or granulated or flake products obtained from the process of separating coffee beans, roasted without being

mixed with other ingredients, ground, extracted with water, dried by spray drying (with or without agglomeration).

According to the government's quality standard policy, regardless of the type of coffee (Robusta or Arabica) and wet or dry processing methods, Indonesian coffee is classified into 6 different classes, depending on the individual value of coffee defects. This quality standard is based on a defective system, which has been adopted nationally since 1984/85 to replace the triage system and was last updated with SNI 01-2907-2008. [6]

The aroma and taste of coffee can be maintained by maintaining the quality of coffee beans throughout the production process from the garden to finished goods. By maintaining the taste, aroma, and quality of products consistently, manufacturers maintain consumer loyalty. The image on these attributes will also add attraction to other consumers.

To enjoy a cup of high-flavored coffee, it takes quite a long process and attempts to maintain the quality of the coffee, starting from the harvesting process in the coffee plantation and the post-harvest process to produce green beans. In the next coffee processing, efforts were also made to maintain the quality of coffee to remain excellent, starting from roasting, grinding, to being ground coffee, which is ready to be packaged and sold.

#### *B. Coffee Production Process (Post-Harvest)*

Post-harvest coffee production processes, starting from the selection of optimal mature coffee beans (colored red) and separate them from the green ones which can cause damage to the quality of processed coffee. After the green bean is collected, roasting is done using the machine. The roasting stage is one of the most important stages to maintain the quality of coffee beans. This process is the stage of forming the aroma and distinctive flavor of the coffee beans with heat treatment. For roasting needs, there are now a variety of automatic roasting machines using electric power accompanied by a variety of advantages, both in terms of appearance, speed in roasting and many sold on the market. Roasted coffee, it is recommended not to come into direct contact with the hand. Processes should be carried out using tools, such as spoons. This is to avoid bacterial contamination from the hands which can result in a decrease in the quality of roasted beans. The next step is the grinding process. This process will produce ground coffee ready to be packaged and then marketed to consumers.

#### *C. Packaging Coffee Products*

Indonesian consumers generally do not question the packaging material, packaging design, label design, packaging size or shelf-life / product expiration date. However, coffee as a specialty product is commonly marketed in attractive packaging. The design of powdered coffee packaging is important in maintaining the quality of ground coffee to remain excellent, where the freshness, aroma, and taste of ground coffee is well maintained, as well as providing a product image. For the types of coffee that want to be given a premium position, powder coffee processing entrepreneurs consider the durability of the taste of their coffee products. Coupled with consideration of other factors such as environmental impacts, costs and the appearance of the packaging that will contribute to determining the selection of powdered coffee.

Small and medium business entrepreneurs can use simple packaging materials for roasted coffee products and ground coffee. The condition is that the packaging is not transparent (not easily exposed to sunlight and light), and there is not much exposure to the outside air. So that the quality of the coffee in it can be maintained longer.

To facilitate marketing and distribution to consumers, powdered coffee packaging is grouped based on the type of quality, packaging size and packaging form. Materials commonly used for packaging coffee powder include packaging from paper, polypropylene plastic, aluminum foil or a combination of paper with plastic. Each type of packaging material has its own weaknesses and strengths. Paper packaging has a low price, easy to obtain, and extensive use. The weakness of paper packaging is its water-sensitive nature and is easily influenced by the humidity of the environment.

Polypropylene plastic packaging is stronger and lighter with low vapor penetration, good resistance to fat, stable to high temperatures and quite shiny. While the aluminum foil packaging has the advantage of being lightweight, easy to form, odorless, can withstand the entry of gas, and not translucent. The weakness of packaging from aluminum foil, which is more expensive when compared to another packaging. [1] The packaged coffee is then put and loaded in a cardboard box. The next, the cardboard is given a clear company name, trademark, and product label. Cardboard piles are then stored in a warehouse with adequate sanitation, lighting, and ventilation.

### III. METHODOLOGY

The study was conducted on coffee farming groups in East Java with samples of coffee farmers in Pasuruan, East Java. Coffee farmers, in this case, are coffee plantation owners who process coffee beans to be marketed in the processed form, where the capacity is still on a small scale. The study was conducted on three small coffee farmers.

This study has implemented the PDCA cycle method (Plan, Do, Check, and Action) in which, focus group discussions (FGD) were carried out in the process. PDCA is a well-known method for continuous process improvement. This method teaches action planning, trial implementation, several checks to see how it fits the plan and acts on what has been tried. The PDCA enables the permanent improvement action by doing the investigation and elimination of the root problems, thus creates a sustainable improved process. [7] The PDCA method consists of four stages for improvement or change. are as follows [8]:

#### *A. Stage 1: Plan (Problem identification, problem analysis, and change planning)*

At this stage, the needs, the goals and the root problems that hinder the achievement of the goals are identified to then, plan the seemingly-working and possible solutions. In this research, the problem identification carried out by a focus group discussion (FGD) between the farmers and researchers.

#### *B. Stage 2: Do (Develop and implement the trial solutions)*

At this stage, the planned methods are tried out. Ensuring that the methods are implemented systematically in all applicable areas to the full extent. Check that the right

tools exist to measure the effectiveness and the planned benefits of the implemented methods. [7]

#### *C. Stage 3: Check (Trial evaluation and result analysis)*

At this stage, the application of the methods is evaluated. The efficiency of the methods is checked and their implementations are regularly measured. Ensure that the improvement of the methods is based on learning activity and performance measurements. Check if the desired outcome has been achieved.

#### *D. Stage 4: Action (The solutions standardization and implementation)*

At this stage, the action is taken based on what was found in the Check stage. If the methods are successful, the changes from the trial are developed to a wider change for greater improvement. If not, those steps have to be carried out again with a different plan. The solutions are then being standardized and implemented for sustainable improvement.

In this research, coffee farmers apply methods that have been successfully tested and are considered feasible to apply. The expected result is an increase in sales performance.

### IV. RESULT

#### *A. The Plan Stage*

The researchers conduct an FGD with coffee farmers to identify the problems, related to business development constraints. The expected results obtained from this FGD are the identification of problems. Problem identification is limited to the process of processed coffee production, not in the process of coffee cultivation. This is due to the results of previous identification, it is known that the process of coffee cultivation has been done well and is done organically so that the harvested coffee is of good quality.

Coffee farmers and researchers conducted discussions (FGD) to find the problems faced by these farmers. From the FGD, the results of problem identification were as follows: first, coffee processing was still not professional and the equipment used was still simple. The process of coffee roasting was done using a regular skillet and human power, so the coffee produced was not as good because of the reduced aroma of coffee. Second, on product packaging. Farmers have provided a decent brand and packaging design, but, because they used traditional equipment, especially in the process of sealing the packaging that was using candle flame, the durability of coffee in the packaging was not long, thus reducing the quality of coffee flavor due to the incoming air in the packaging.

From the results of the identification, we together planned as follows: for the first problem, the improvement was sought through the improvement of the coffee roasting process by providing an automatic coffee roasting machine. For the second problem, it was carried out by improving product packaging in the form of packaging seal equipment using press machines to make the packaging process better and maintain the quality of the coffee.

#### *B. The Do Stage*

At this stage, coffee farmers try the tools provided. The first problem-solving results obtained better-roasted coffee results because in the process using an automatic roaster. In one process, the automatic roaster is able to roast five

kilograms of coffee in nine minutes with evenly roasted results, so the aroma of the coffee beans does not change. To solve the second problem, coffee farmers are provided with packaging equipment for the sealing process so that the packaging becomes standard and the quality of the coffee is not damaged. At this stage, the results obtained are good.

#### *C. The Check Stage*

After testing the tools, the results obtained are: The quality of roasted coffee is better than before because the aroma and taste of coffee are still strong; the quality of the packaging is better because of a more standard seal so it does not reduce the quality of coffee flavor.

#### *D. The Action Stage*

After testing the roasting technique using an automatic roasting machine and packaging using a better seal machine, the product quality has improved. At this stage, the coffee farmers began marketing again with a new look. After one month of trying to do sales through social media as previously done, obtained positive responses from customers as indicated by an increase in the number of product demands. There was an increase in sales of 15% from previous sales. The increase is still quite low considering that the sales test period is still relatively short, which is one month. However, this has provided a good opportunity for coffee farmers to be more active in marketing their products. There is also an increase in sales coming from cafe businesses in big cities in East Java. These results indicate that the coffee market is still very potential, especially the demand for pure coffee.

### V. DISCUSSION

The results showed that after the implementation of the PDCA method through FGD and practice, it was known that the improvement in the production process could improve product quality. With the use of a better roasting machine, coffee roasting results become better, which is characterized by the aroma of coffee that is still maintained and a more even level of coffee beans doneness, in the sense that there are no charred or undercooked beans. And with the use of a better packaging sealer machine, the quality of the packaging is better because of a more standard packaging seal so it does not reduce the quality of coffee flavor. In this case, a good and standard coffee roasting and packaging process will maintain the quality of the aroma and taste of coffee, thus improving the overall quality of the product.

Prior studies reveal two observations regarding the quality of the product in line with the marketing strategy that is important. First, the positive influence of product quality on sales performance was stressed more in studies conducted in Europe. Second, the empirical data indicated a strong association between product quality and customer performance. [9] Another study also found that product quality has a positive influence on sales performance. [10] [11] These improvements in product quality create an increase in sales of 15% from previous sales in one month. The aroma, taste, and flavor are parameters commonly used to determine the quality of the coffee. [12] Given that coffee is a beverage product that prioritizes flavor and aroma, so for consumers, the quality of taste and aroma is very important.

## VI. CONCLUSION, IMPLICATION, AND SUGGESTION

Product quality is considered significant in improving sales performance. From observations on small coffee businesses in East Java, the results showed that their coffee products were still of lesser good quality. For this reason, assistance from experts is needed to help the farmers of the small coffee business to improve the quality of their products so that sales performance increases so as to improve the welfare of the farmers. This study which was conducted on coffee farmers in Pasuruan has implemented the PDCA cycle method (Plan, Do, Check, and Action) in which, focus group discussions (FGD) were carried out in the process.

In the Plan stage, an FGD is conducted with coffee farmers to identify the problems, related to business development constraints. The first problem, coffee processing was still not professional and the equipment used was still simple, and the plan of improvement was sought through the improvement of the coffee roasting process by providing an automatic coffee roasting machine. The second problem is product packaging, and the plan was carried out by improving product packaging in the form of packaging seal equipment using press machines to make the packaging process better and maintain the quality of the coffee. At the Do stage, coffee farmers try the tools provided, and the results obtained are good. At the Check stage, the quality of roasted coffee and the packaging are found better than before. At the Action stage, the coffee farmers began marketing again with a new look. The overall result of the PDCA method was the coffee obtained positive responses from customers as indicated by an increase in the number of product demands. There was an increase in sales of 15% from previous month sales.

The implication of this research is it can be used as a recommendation to improve coffee product quality by utilizing better machines and equipment. By improving the product quality it is expected that the sales performance will also increase. This research suggests that the next research is to observe the improvement of product quality and its influence on sales performance in a longer period.

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