Book of ICTVET 2018

Technical & Vocational Education Training on The Industrial Revolution 4.0

In The 3rd International Conference on Technical and Vocational Education and Training (3rd ICTVET) Hosted by Faculty of Engineering, Universitas Negeri Jakarta, at Grand Mercure Jakarta Harmoni Hotel, Indonesia on October 20th-21st, 2018

Universitas Negeri Jakarta
Cover
PREFACE

Assalamu Alaikum Wr. Wb.,

I am sincerely glad to welcome all you here, especially as I see very many familiar colleagues, friends, and our partners.

Welcome to Jakarta!

First of all, I would like to praise God for His blessings and mercies which allow all of us to be here today in this building in good health. I wish to express our deepest appreciation to those who have come from far away, many of them having been involved in commencing exactly what we have gathered here for.

It would be our great pleasure to welcome all of you, educators, experts, engineers, and professional researchers from all over the world. THE 3rd INTERNATIONAL CONFERENCE ON TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (3rd ICTVET) 2018 is a scientific forum where all of us could meet colleagues and friends of broad areas, discuss and disseminate research findings and discoveries as well as to develop knowledge, technology, arts, and sustainable research networks, particularly in vocational education, electrical engineering, and informatics. This year conference raises a very important theme on — Technical & Vocational Education Training on The Industrial Revolution 4.0. Therefore, it is a great pleasure and beneficial for all of us here today if we are able to take this advantage to build strong sustainable networks among researchers in order to develop knowledge, technology through recent research and innovation.

By hosting this conference, Faculty of Engineering UNJ is not only gaining the advancement of science and technology from all the findings and discoveries delivered during the conference, but also fruitful to encourage and enhance the arts and cultural values that would further dignify our nation and country among other worldwide.

We have 101 articles with details Malaysia 4, India 1, Germany 1, Taiwan 1, and Indonesia 94.

Finally, I would like to convey our sincere gratitude to all participants, distinguished guests, and speakers that make this conference a great success. Thank you very much for being here. On behalf Faculty of Engineering UNJ, I thank you very much for your hard and untiring efforts. I wish that all of you may put all your continuous plants into undisturbed actions. And should push come to shove, that all your core processes may be continued seamlessly elsewhere. Today’s program offers many various approaches to the issue. I wish you a very successful, productive, and inspiring conference!

The conference is a once every two years event which is held near the end of the year. We do hope that we could welcome you again next year in the 4th ICTVET 2020, which certainly offers the most recent topics as well as advance science and technology in various areas.

Thank you most cordially for your attention.

Wassalamu Alaikum Wr. Wb.,
Dean of Faculty of Engineering
Universitas Negeri Jakarta
RECTOR’S GREETING

Assalamu Alaikum Wr. Wb.,

Good morning Ladies and Gentlemen, allow me in this opportunity to open this conference by first praying our grateful and praise to Almighty God for all His blessings, grace, and mercies that have made us possible to gather here in this room in excellent condition and health.

Dear distinguished guests and participants of the THE 3rd INTERNATIONAL CONFERENCE ON TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING (3rd ICTVET) 2018 with the theme — Technical & Vocational Education Training on The Industrial Revolution 4.0.

Universitas Negeri Jakarta (UNJ) is very pleased to host this conference in Jakarta. I believe the conference will provide an opportunity for participants to disseminate new knowledge specially in Vocational Education and Engineering major, and share recent experiences and knowledge as well as new practices, technologies, and new concept.

My sincere appreciation also goes to all Keynote Speakers who have volunteered and spent your tight schedule to contribute to this special event in Jakarta. Your contribution to this conference and specially to Indonesia is highly appreciated.

Greatest thanks are due to all our Organizing Committee members for their dedication and continuous efforts and hard work in preparing as well as organizing this conference with the supports from UNJ lecturers and students. To our main and supporting sponsors and donors, our most gratitude and thanks for their generous contributions to make this conference possible.

Greatest thanks also to our participants, especially those who have contributed technical papers, thank you for your participation in this conference. I am convinced that this conference will be inspiring and wish you all a successful and memorable time.

I would like to sincerely congratulate all of you to have fruitful conference and discussions and enjoy meeting new friends and colleagues and to take advantages to support your profession during this conference. I wish you all have a truly sweet memory and enjoyable stay in Jakarta.

Wassalamu Alaikum Wr. Wb.,
Rector of UNJ
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5. Despinur Dara, ST, MM
6. Sugito
7. Mardiyansyah
8. Ayi Sutisna
9. Edy Sutikno
# CONFERENCE SCHEDULE

**Date:** October 20, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Programs</th>
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<tbody>
<tr>
<td>08.00 – 08.30</td>
<td>Registration of presenters and participants</td>
</tr>
<tr>
<td>08.30 – 09.20</td>
<td>First Parallel Session  &lt;br&gt; Opal Room: Vocational Education and Training (1)  &lt;br&gt; Moderator: Dr. M. Yusro, MT.  &lt;br&gt; Emerald Room: Vocational Education and Training (2)  &lt;br&gt; Moderator: Dr. Riza Wirawan</td>
</tr>
<tr>
<td>09.20 – 09.30</td>
<td>Coffee break</td>
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<tr>
<td>09.30 – 09.45</td>
<td>Opening  &lt;br&gt; 1. Singing the National Anthem Indonesia Raya  &lt;br&gt; 2. Dean’s Report  &lt;br&gt; 3. Rector’s Greeting and opening the event</td>
</tr>
<tr>
<td>09.45 – 10.35</td>
<td>Main Speaker Session  &lt;br&gt; Minister Communications and Information Technology  &lt;br&gt; Moderator: Dr. Eng. Agung Premono</td>
</tr>
<tr>
<td>10.35 – 12.00</td>
<td>Keynote Speakers Session  &lt;br&gt; <strong>Theme 1:</strong> Development of Intelligent Omni-Directional AGV Based Cyber Physical System and Its On-Site Implementation  &lt;br&gt; Keynote Speaker: Prof. Ming-Shyan Wang, Ph.D. From Department of Electrical Engineering, Southern Taiwan University of Science and Technology  &lt;br&gt; <strong>Theme 2:</strong> Lifelong Learning in The Era of Industrial Revolution 4.0  &lt;br&gt; Keynote Speaker: Associate Prof. Dr. Norhani Bakri, from Faculty of Social Sciences and Humanities, Universiti Teknologi Malaysia  &lt;br&gt; <strong>Theme 3:</strong> State of The Arts on Human-Computer Interaction  &lt;br&gt; Keynote Speaker: Kohei Arai, from Saga University, Kurume Institute of Technology  &lt;br&gt; Moderator: Dr. Eng. Agung Premono</td>
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<tr>
<td>12.00 – 13.00</td>
<td>Lunch</td>
</tr>
<tr>
<td>Time</td>
<td>Programs</td>
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</table>
| 13.00 – 16.00 | Second Parallel Seminar Session  
Oval Room: Vocational Education and Training (3)  
Moderator: Dr. M. Yusro, MT.  
Emerald Room: Vocational Education and Training (4)  
Moderator: Lipur Sugiyanta, Ph.D.  
Ball Room-1: Engineering (1)  
Moderator: Dr. Riza Wirawan, MT.  
Ball Room-2: Engineering (2)  
Moderator: Dr. Irika Widiasanti  
VIP Room: Innovation Industry  
Moderator: Efrina K, M.Si. |
| 16.00 – 16.30 | Coffee break                                                             |
| 16.30 – 17.00 | Closing session (with announcement the best papers and presenter)  
Hand-over certificates |

**Date: October 20, 2018**
City Tour
Parallel Session 1
Opal Room : Vocational Education and Training Topics (1)
Moderator : Dr. M. Yusro, MT.

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<th>No.</th>
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<tbody>
<tr>
<td>1</td>
<td>08:30 – 08:40</td>
<td>Relationship between the Selected Factors with Entrepreneurial Career Aspirations among Students of Community Colleges in Malaysia (ICTVET_2018_001)</td>
<td>Tie Seng Te, Arnida Abdullah and Abdullah Mat Rashid</td>
</tr>
<tr>
<td>2</td>
<td>08:40 – 08:50</td>
<td>Animation For Improving Learning Results of Braking System Expertise (ICTVET_2018_002)</td>
<td>Hendro Sumual, Parsaoran Tamba and Deivy Ombuh</td>
</tr>
<tr>
<td>3</td>
<td>08:50 – 09:00</td>
<td>Designing performance assessment for manual polishing practice in vocational high school (ICTVET_2018_007)</td>
<td>Shofa Fitriturrohmi Yusuf, Neni Rohaeni, Nenden Rani Rinekasari and Mirna Purnama Ningsih</td>
</tr>
<tr>
<td>4</td>
<td>09:00 – 09:10</td>
<td>Standard Operating Procedure of Housekeeping Adaptation: The Development of Assessment Tools in Cleaning Bathroom Practices at Vocational High School (ICTVET_2018_008)</td>
<td>Nenden Rani Rinekasari, Yoyoh Jubaedah and Siti Nuraeni Sobariah</td>
</tr>
<tr>
<td>5</td>
<td>09:10 – 09:20</td>
<td>Implementation of full day school and its impact on the students’ character building in vocational school (ICTVET_2018_017)</td>
<td>Suharno Suharno, Nugroho Agung Pambudi and Budi Harjanto</td>
</tr>
</tbody>
</table>

Emerald Room : Vocational Education and Training Topics (2)
Moderator : Dr. Riza Wirawan

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<tr>
<th>No.</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>08:30 – 08:40</td>
<td>Application of Multiplication for Developing Tourism student speaking skill (ICTVET_2018_022)</td>
<td>Agustinus Lumettu, Treesje Lusje Runtuwene</td>
</tr>
<tr>
<td>2</td>
<td>08:40 – 08:50</td>
<td>Bugih Cloth as Traditional Hermeneutics In Minangkabau (ICTVET_2018_102)</td>
<td>Melly Prabawati, Wesnina and M Haryono</td>
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</tbody>
</table>
### Parallel Session 2

**Opal Room : Vocational Education and Training Topics (3)**

**Moderator : Dr. M. Yusro, MT.**

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<tr>
<th>No.</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>13:00 – 13:10</td>
<td>Developing android educational games application for enhancing children’s healthy food skill (ICTVET_2018_004)</td>
<td>Annis Kandriasari, Nur Riska and Yeni Yulianti</td>
</tr>
<tr>
<td>2</td>
<td>13:10 – 13:20</td>
<td>The effectiveness of Using Interactive CD Media on Continental Cake Processing to Improve Learning Outcomes of Course Participants in Culinary (ICTVET_2018_006)</td>
<td>Sachriani Sachrom, Rusilanti Rusilanti and Mutiara Dahlia</td>
</tr>
<tr>
<td>3</td>
<td>13:20 – 13:30</td>
<td>Developing and using multimedia effectively for cirebonese language learning (ICTVET_2018_010)</td>
<td>Ahmad Ripai, Basuki Wibawa and Asma niar Z Idris</td>
</tr>
<tr>
<td>4</td>
<td>13:30 – 13:40</td>
<td>Development of android-based elin game as learning media for industrial electronics (ICTVET_2018_014)</td>
<td>Mochammad Sukardjo and Vina Oktaviani</td>
</tr>
<tr>
<td>5</td>
<td>13:40 – 13:50</td>
<td>Mapping of Family Literacy and Cultural Literacy in Families (ICTVET_2018_018)</td>
<td>Tarma - and Uswatun Hasanah</td>
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<tr>
<td>No.</td>
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<tr>
<td>6</td>
<td>13:50 – 14:00</td>
<td>Development of Electronic Learning Design 3 Study Program of Vocational Education in Electronics Engineering Jakarta State University (ICTVET_2018_021)</td>
<td>Arum Setyowati</td>
</tr>
<tr>
<td>7</td>
<td>14:00 – 14:10</td>
<td>Study of Analysis on The Characteristics of Learning Style Students Vocational Education of Building Construction Study Program, Faculty of Engineering (ICTVET_2018_023)</td>
<td>Santoso Sri Handoyo, Tuti Iriani, Erna Septiandini</td>
</tr>
<tr>
<td>8</td>
<td>14:10 – 14:20</td>
<td>The development of psychomotoric appraisal instrument in fundamental barber practices as the effort in increasing learning process of barber lecture subject (ICTVET_2018_024)</td>
<td>Lilis Jubaedah</td>
</tr>
<tr>
<td>9</td>
<td>14:20 – 14:30</td>
<td>Analysis of Students attitude home economics group study program in the field of science and its influence on science learning result (ICTVET_2018_025)</td>
<td>Dwi Atmanto, Sri Irtawidjajanti, Aniesa Puspa Arum</td>
</tr>
<tr>
<td>10</td>
<td>14:30 – 14:40</td>
<td>The relationship of learning competence learning outcomes with the implementation of pkm in training schools (ICTVET_2018_026)</td>
<td>Lilies Yulastri, Eti Herawati</td>
</tr>
<tr>
<td>11</td>
<td>14:40 – 14:50</td>
<td>The Education model for authorized outdoor and terrible areas concerning diversity of environmental, social and cultural conditions (based on local wisdom) (ICTVET_2018_028)</td>
<td>Agus Dudung, Uswatun Hasanah, Mirdat Silitonga</td>
</tr>
<tr>
<td>12</td>
<td>14:50 – 15:00</td>
<td>Analysis of family typology based on family development stage (ICTVET_2018_029)</td>
<td>Mulyati, Prastiti Laras Nugraheni, Kenty Martiastuti</td>
</tr>
<tr>
<td>13</td>
<td>15:00 – 15:10</td>
<td>The Use Of Production Based Learning Models To Improve Student Learning Outcomes In Study Of Carving Working Techniques On Skill Competence (ICTVET_2018_030)</td>
<td>Entin Agustina</td>
</tr>
<tr>
<td>14</td>
<td>15:10 – 15:20</td>
<td>The effect of supervision, work culture, and trust to performance of elementary public school principal of west jakarta city (ICTVET_2018_031)</td>
<td>Muhammad Fahmi Akbar, Ma’rus Akbar, Mukhneri Mukhtar</td>
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<tr>
<td>15</td>
<td>15:20 – 15:30</td>
<td>Need Analysis to Develop Anti-Corruption Behavior of Early Childhood Through Parenting Education Model (ICTVET_2018_033)</td>
<td>Uswatun Hasanah and Tarma</td>
</tr>
<tr>
<td>18</td>
<td>15:50 – 16:00</td>
<td>Analysis Validity and Reliability an Instrument the Measurement of the Self-Academic Concept in a College Student of Cosmetology of Engineering Faculty State University of Jakarta (ICTVET_2018_042)</td>
<td>Sitti Nursetiawati and Jenny Sista Siregar</td>
</tr>
<tr>
<td>19</td>
<td>16:00 – 16:10</td>
<td>Career Guidance Shortages in Indonesian Vocational High School (ICTVET_2018_045)</td>
<td>Imam Mahir and Thomas Köhler</td>
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</table>

Emerald Room: Vocational Education and Training Topics (4)
Moderator: Lipur Sugiyanta, Ph.D.

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<th>No.</th>
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<tbody>
<tr>
<td>1</td>
<td>13:00 – 13:10</td>
<td>TVE transformation: vocational lecturers’ readiness and challenges in teaching vocational subjects in vocational colleges of home economics (ICTVET_2018_048)</td>
<td>Anis Zakaria, Nur Amirah Azmi, Rahimah Jamaluddin and Rosnani Jusoh</td>
</tr>
<tr>
<td>3</td>
<td>13:20 – 13:30</td>
<td>Development of Draping learning media through Dress form in determining the Pear Body shape compensation ratio on custom skirts (ICTVET_2018_052)</td>
<td>Vivi Radiona SP, Esty Nurbaitay A</td>
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<tr>
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<tr>
<td>5</td>
<td>13:40 – 13:50</td>
<td>Validity and Reliability and clothing disposal behaviour instrument (ICTVET_2018_054)</td>
<td>Arasinah Kamis, Fara Najwa Ahmad Puad, Rahimah Jamaludin</td>
</tr>
<tr>
<td>6</td>
<td>13:50 – 14:00</td>
<td>Identification of Technical Skills Achievements of Students Based on Indonesian National Qualification Framework (KKNI) (ICTVET_2018_055)</td>
<td>Rina Febriana1,* Muhammad Aries Triyanto2 and Annis Kandriasari</td>
</tr>
<tr>
<td>7</td>
<td>14:00 – 14:10</td>
<td>Identification of Nutrition and Young Women Reproductive Knowledge in the Making of Interactive Learning Video Based on Community Empowerment (ICTVET_2018_056)</td>
<td>Guspri Devi Artanti, Rina Febriana and Rusilanti</td>
</tr>
<tr>
<td>8</td>
<td>14:10 – 14:20</td>
<td>Development of Hardware-In-The-Loop Simulation Control System for Diploma Student Practicum (ICTVET_2018_069)</td>
<td>Muhammad Rif’An</td>
</tr>
<tr>
<td>9</td>
<td>14:20 – 14:30</td>
<td>A systematic literature review of short text classification on twitter (ICTVET_2018_074)</td>
<td>Bambang Prasetya Adhi, Dea Saskiah and Widodo Widodo</td>
</tr>
<tr>
<td>10</td>
<td>14:30 – 14:40</td>
<td>Effect of competence teacher and student learning environment program on student achievement light vehicle engineering (ICTVET_2018_075)</td>
<td>Constantinus Rudy Prihantoro, Mohamad Wafirul Hadi and Ratu Amilia Avaianti</td>
</tr>
<tr>
<td>11</td>
<td>14:40 – 14:50</td>
<td>The effect of teacher competency and teaching commitment to student learning results machining engineering skills program (ICTVET_2018_076)</td>
<td>Constantinus Rudy Prihantoro, Fiqi Ikhwanto and Agus Dugung</td>
</tr>
<tr>
<td>12</td>
<td>14:50 – 15:00</td>
<td>Development of Palang Pintu as an Edutainment in Venetië van Java (Batavia) (ICTVET_2018_078)</td>
<td>Jenny Sista Siregar and Sri Irtawidjajantian</td>
</tr>
<tr>
<td>13</td>
<td>15:00 – 15:10</td>
<td>The development of blish (blended learning based on handphone) for computer system subject on xi grade of smkn 1 bengkulu city (ICTVET_2018_091)</td>
<td>Paidi1,* Basuki Wibawa2, Atwi Suparman3</td>
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<td>14</td>
<td>15:10 – 15:20</td>
<td>&quot;ASICT&quot; Learning model in vocational education in 3T Area’s</td>
<td>Agus Dudung and Diat Nurhidayat</td>
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<td></td>
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<td>(ICTVET_2018_093)</td>
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<tr>
<td>16</td>
<td>15:30 – 15:40</td>
<td>Efforts to Improve Teacher Performance in Contributing Against the Problem-Solving Ability of Junior High School Students in Mathematics (ICTVET_2018_096)</td>
<td>Erdawaty Kamaruddin, and Yuliatri Sastra Wijaya</td>
</tr>
<tr>
<td>18</td>
<td>15:50 – 16:00</td>
<td>The Relationship Of The Quality Of The Physical Environment, The Communication Pattern Of Modern Family And Student Self Concept (ICTVET_2018_098)</td>
<td>Sitti Nursetiawati</td>
</tr>
<tr>
<td>19</td>
<td>16:00 – 16:10</td>
<td>Development Analysis of organizational management link and match output of the Vocational Fashion Design Study Program - Faculty of Engineering, Jakarta State University (ICTVET_2018_100)</td>
<td>Wesnina and Dewi Suliantihini</td>
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**Ball Room-1 : Engineering Topics (1)**

**Moderator : Dr. Riza Wirawan**

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<tbody>
<tr>
<td>1</td>
<td>13:00 – 13:10</td>
<td>Design and Development of Student Admission System in State University of Jakarta (ICTVET_2018_003)</td>
<td>Hanifa Fissalma and Hamidillah Ajie</td>
</tr>
<tr>
<td>3</td>
<td>13:20 – 13:30</td>
<td>Effect of Non-Linear Electricity Loads Against Harmonics in One Phase Inverters (ICTVET_2018_012)</td>
<td>Imam Rahardjo, Purwanto Gendroyono, Irzan Zakir and Suyitno Musim</td>
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<td>-----</td>
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<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>13:40 – 13:50</td>
<td>The Influence of Seawater Abrasion on the Compressive and Splitting Tensile Strength (ICTVET_2018_019)</td>
<td>Kusno Sambowo and Achmad Basuki</td>
</tr>
<tr>
<td>6</td>
<td>13:50 – 14:00</td>
<td>Experimental study of Pervious Concrete with Various Aggregates for Sustainable Pavement Material (ICTVET_2018_020)</td>
<td>Tri Mulyono, Anisah</td>
</tr>
<tr>
<td>7</td>
<td>14:00 – 14:10</td>
<td>United States of United States GPS for determining position (ICTVET_2018_027)</td>
<td>Marhaenda Arvai K.S</td>
</tr>
<tr>
<td>8</td>
<td>14:10 – 14:20</td>
<td>Aerodynamic Drag reduction of vehicle sipitung G4 UNJ for shell ecomarathon asia 2015 (ICTVET_2018_032)</td>
<td>Sirojuddin, Raden Engineu, Wardoyo</td>
</tr>
<tr>
<td>9</td>
<td>14:20 – 14:30</td>
<td>Temperature Influence E7018 Electrode Drying Against Mechanical Properties of SMAW Process Results on A36 Steel (ICTVET_2018_041)</td>
<td>Syaripuddin, Syaripuddin and Candra Wahyu Setyawan</td>
</tr>
<tr>
<td>10</td>
<td>14:30 – 14:40</td>
<td>Prototype Smart Trash Can for Implementation Smart Environment in the Smart City based on Arduino and Android (ICTVET_2018_043)</td>
<td>Henita Rahmayanti, Yusuf Syani and Vina Oktaviani</td>
</tr>
<tr>
<td>11</td>
<td>14:40 – 14:50</td>
<td>Vision Based Surveillance System for Security Room (ICTVET_2018_046)</td>
<td>Taryudi Taryudi and Ming-Syhan Wang</td>
</tr>
<tr>
<td>12</td>
<td>14:50 – 15:00</td>
<td>Design and Development of Web Service Aplication for Multi Bank Student Payment System in State University of Jakarta (ICTVET_2018_047)</td>
<td>Muhammad Duskarnaen, Muhammad Insan and Achmad Ahlar</td>
</tr>
<tr>
<td>13</td>
<td>15:00 – 15:10</td>
<td>Designing Power Wave AUTOMASS (Automatic Maritime Security System) As Effort To Prevent Illegal Fishing (ICTVET_2018_058)</td>
<td>Massus Subekti, Muhammad Rif'An and Daryanto Daryanto</td>
</tr>
<tr>
<td>No.</td>
<td>Time</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
<td>-----------</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>15</td>
<td>15:20 – 15:30</td>
<td>Prototype of Temperature and Dust Monitoring in Room Based on Microcontroller System (ICTVET_2018_060)</td>
<td>Agung Pangestu, Muhammad Yusro and Wisnu Djatmiko</td>
</tr>
<tr>
<td>16</td>
<td>15:30 – 15:40</td>
<td>Network Throughput Improvement on Campus Network with OSPF Metric Routing Protocol Modification (ICTVET_2018_061)</td>
<td>Lipur Sugiyanta and Ze Ferdi Fauzan</td>
</tr>
<tr>
<td>18</td>
<td>15:50 – 16:00</td>
<td>Effect of pertalite – methanol blends on performance and exhaust emission of a four stroke 125 cc motorcycle engine (ICTVET_2018_068)</td>
<td>I Wayan Sugita, Darwin Rio Budi Syaka and Aziz Irianto Wahyudi</td>
</tr>
<tr>
<td>19</td>
<td>16:00 – 16:10</td>
<td>Experimental study of savonius wind turbine performance with variation of blade shape, turbine stage, and gap between blades (ICTVET_2018_070)</td>
<td>Catur Setyawan Kusumohadi, Arif Nur Arifin and Firman Julismar</td>
</tr>
</tbody>
</table>

**Ball Room-2 : Engineering Topics (2)**

**Moderator : Dr. Irika Widiasanti**

<table>
<thead>
<tr>
<th>No.</th>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13:00 – 13:10</td>
<td>The effect of transformational leadership and organizational commitment to organizational citizenship behavior (ocb) in building construction companies (ICTVET_2018_077)</td>
<td>Adhi Purnomo and Winoto Hadi</td>
</tr>
<tr>
<td>3</td>
<td>13:20 – 13:30</td>
<td>A Need Assessment on Competency Certification of Construction Workers in Indonesia (ICTVET_2018_009)</td>
<td>Riyan Arthur and Daryati Daryati</td>
</tr>
<tr>
<td>No.</td>
<td>Time</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td>13:30 – 13:40</td>
<td>Development of Automotive Vocational Homeschooling Educational Based on Technopreneurship in Jakarta Indonesia (ICTVET_2018_057)</td>
<td>Siska Titik Dwiyati, Ahmad Kholil, Riyadi and Ragil Sukarno</td>
</tr>
<tr>
<td>5</td>
<td>13:40 – 13:50</td>
<td>Acceptance of information and communication technology for vocational high school management (ICTVET_2018_082)</td>
<td>Daryanto Daryanto</td>
</tr>
<tr>
<td>6</td>
<td>13:50 – 14:00</td>
<td>Revealing factors hindering on competency certification for skilled labour in the construction sector (ICTVET_2018_057)</td>
<td>Irika Widiasanti, Doddy Rochadi, Agung Fridestu and Lenggogeni</td>
</tr>
<tr>
<td>7</td>
<td>14:10 – 14:20</td>
<td>Internet of Things (IoT): BLYNK Framework for Smart Home (ICTVET_2018_073)</td>
<td>Ermi Media’s, Syufrijal Syufrijal and Muhammad Rif’An</td>
</tr>
<tr>
<td>8</td>
<td>14:20 – 14:30</td>
<td>Portion Improvement of Vehicle Entry Units Through The Improvement of Express Periodic Maintenance Service Methods in Cars Workshop (ICTVET_2018_079)</td>
<td>Aam Amaningsih Jumhur, Ahmad Kholil and Sagung Rahadi</td>
</tr>
<tr>
<td>9</td>
<td>14:30 – 14:40</td>
<td>Design and Implementation of Low-Cost Wideband Antenna for Ground Penetrating Radar (ICTVET_2018_080)</td>
<td>Baso Maruddani, Efri Sandi and Muhammad Fadhil</td>
</tr>
<tr>
<td>11</td>
<td>14:50 – 15:00</td>
<td>Microstructure and Mechanical Properties Analysis of Quenched and Tempered AISI 4340 Steel (ICTVET_2018_083)</td>
<td>Imam Basori, Almalia Surocaena, Siska Titik Dwiyati, Yunita Sari and Balbir Singh</td>
</tr>
<tr>
<td>12</td>
<td>15:00 – 15:10</td>
<td>Analysis compressive strength of solid waste recycling battery as a partially replacing sand in concrete (ICTVET_2018_085)</td>
<td>Prihantono</td>
</tr>
<tr>
<td>13</td>
<td>15:10 – 15:20</td>
<td>Application of Risk Management in overseeing Indonesia’s marine toll (Tol Laut) program (ICTVET_2018_088)</td>
<td>Karim Ladesi</td>
</tr>
</tbody>
</table>
### The 3rd International Conference on Technical and Vocational Education and Training

Jakarta, October 20th – 21st, 2018

<table>
<thead>
<tr>
<th>No.</th>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>15:20 – 15:30</td>
<td>Analysis of Standardization Size of Women's Muslim clothing in Indonesian (ICTVET_2018_092)</td>
<td>Esty Nurbaity, Suryawati</td>
</tr>
<tr>
<td>15</td>
<td>15:30 – 15:40</td>
<td>Developing of web based information system for universitas negeri Jakarta (ICTVET_2018_095)</td>
<td>Prasetyo Wibowo Yunanto, Diat Nurhidayat and Rimulyo Wicaksono</td>
</tr>
<tr>
<td>16</td>
<td>15:40 – 15:50</td>
<td>Web-based employee attendance system using Finger print scanner (ICTVET_2018_101)</td>
<td>Bachren Zaini</td>
</tr>
<tr>
<td>17</td>
<td>15:50 – 16:00</td>
<td>Risk analysis of workplace accident using hazard identification and risk assessment (hira) (Case Study on the Machining Practice Workshop of SMK Dinamika Pembangunan Jakarta) (ICTVET_2018_103)</td>
<td>Ja'far Amiruddin</td>
</tr>
<tr>
<td>18</td>
<td>16:00 – 16:10</td>
<td>Study of Urban Drainage Network Performance in Maximum Discharge Storage In the City of Bandung (ICTVET_2018_104)</td>
<td>Rakhmat Yusuf</td>
</tr>
</tbody>
</table>

**VIP Room: Innovation Industry Topics**

**Moderator: Efrina K, M.Si.**

<table>
<thead>
<tr>
<th>No.</th>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>13:00 – 13:10</td>
<td>Codification of Soto Nusantara Seasoning to Preserve National Culinary (ICTVET_2018_013)</td>
<td>Ari Fadiati, Mariani - and Sachriani Sachrom</td>
</tr>
<tr>
<td>2</td>
<td>13:10 – 13:20</td>
<td>Tourism developing based on local culture segaran village, karawang, west java (ICTVET_2018_016)</td>
<td>Rasha Rasha and Nurlaila A Mashabi</td>
</tr>
<tr>
<td>4</td>
<td>13:30 – 13:40</td>
<td>The Influence of Pumkins Masker Usage to The Moisture of Skin Face (ICTVET_2018_038)</td>
<td>Nurina Ayuningtyas, Jenny Sista and Mari Okatini</td>
</tr>
<tr>
<td>5</td>
<td>13:40 – 13:50</td>
<td>Topical Herbal Therapy with Solanum tuberosum L. to Combat Acne (ICTVET_2018_049)</td>
<td>Neneng Siti Silfi Ambarwati</td>
</tr>
<tr>
<td>No.</td>
<td>Time</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
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<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>6</td>
<td>13:50 – 14:00</td>
<td>The Influence of Combination of Castor Oil With Aquades To Increased Moisture Dry Skin (ICTVET_2018_050)</td>
<td>Nurul Hidayah 1 and Titin Supiani 2</td>
</tr>
<tr>
<td>7</td>
<td>14:00 – 14:10</td>
<td>The Importance of ICT for Office Administration in Millenial Era (ICTVET_2018_061)</td>
<td>Nuryetty Zain, Henry Eryanto and Marsofiyati</td>
</tr>
<tr>
<td>8</td>
<td>14:10 – 14:20</td>
<td>Implementation of Google Calendar as an Android based-agenda application (ICTVET_2018_062)</td>
<td>Marsofiyati</td>
</tr>
<tr>
<td>10</td>
<td>14:30 – 14:40</td>
<td>Validity and Reliability of Sustainability and Clothing Disposal Behavior Instrument (ICTVET_2018_064)</td>
<td>Arasinah Kamis, Fara Najwa Ahmad Puad and Rahimah Jamaluddin</td>
</tr>
<tr>
<td>11</td>
<td>14:40 – 14:50</td>
<td>Molecular identification of Pathogen Yeast from Star Gooseberry (Phyllanthus acidus) and Cucumber (Cucumis sativus L) Extracts (ICTVET_2018_065)</td>
<td>Ridawati Ridawati, Alsuhendra Alsuhendra and Yati Setiati</td>
</tr>
<tr>
<td>12</td>
<td>14:50 – 15:00</td>
<td>The pH Value, Total Dissolved Solid and Sensory Profile of Silky Pudding with Extract “Secang” wood (Caesalpina sappan L) (ICTVET_2018_071)</td>
<td>Suci Rahayu, Alsuhendra Alsuhendra and Ridawati Ridawati</td>
</tr>
<tr>
<td>13</td>
<td>15:00 – 15:10</td>
<td>The Innovation of The Purple Sweet Potatoes Noodle Processing (Test of Sensory Quality Analysis) (ICTVET_2018_072)</td>
<td>Mahdiyah Mokhtar</td>
</tr>
<tr>
<td>14</td>
<td>15:10 – 15:20</td>
<td>Analysis of work safety and health risk management qualitatives in reducing construction project cost overruns (ICTVET_2018_086)</td>
<td>Anisah</td>
</tr>
<tr>
<td>15</td>
<td>15:20 – 15:30</td>
<td>Influence of the addition of the Essential Oil of Cinnamon (Cinnamomum burmanii) in Soap against Skin Care (ICTVET_2018_086)</td>
<td>Dwi Atmanto</td>
</tr>
<tr>
<td>No.</td>
<td>Time</td>
<td>Title</td>
<td>Authors</td>
</tr>
<tr>
<td>-----</td>
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<td>----------------------------------------------------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>16</td>
<td>15:30 – 15:40</td>
<td>Implementation of 2-inch grading technique for making blouse pattern in modiste business (ICTVET_2018_099)</td>
<td>Harsuyanti R. Lubis</td>
</tr>
</tbody>
</table>
SITE PLAN

[Map of the site plan with marked location]
Pada bagian ini kami akan menginformasikan mengenai rencana jadwal perjalanan secara keseluruhan, yang tertuang dalam itinerary sebagai berikut:

<table>
<thead>
<tr>
<th>WAKTU</th>
<th>KEGIATAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>07:30 - 08:30</td>
<td>Kumpul di Fakultas Teknik, Universitas Negeri Jakarta</td>
</tr>
<tr>
<td>08:30 - 09:00</td>
<td>Menuju Kota Tua</td>
</tr>
<tr>
<td>09:00 - 11:30</td>
<td>Explore Kota Tua</td>
</tr>
<tr>
<td>11:30 - 11:45</td>
<td>Menuju RM. Ilkan Bakar Cianjur</td>
</tr>
<tr>
<td>11:45 - 13:30</td>
<td>Makan Siang di RM. Ilkan Bakar Cianjur</td>
</tr>
<tr>
<td>13:30 - 14:00</td>
<td>Menuju Thamrin City</td>
</tr>
<tr>
<td>14:00 - 16:30</td>
<td>Belanja di Thamrin City</td>
</tr>
<tr>
<td>16:30 - 17:30</td>
<td>Kembali ke Fakultas Teknik, Universitas Negeri Jakarta</td>
</tr>
</tbody>
</table>

**KONSEP CITY TOUR**

Old & New Jakarta sebagai ibukota Indonesia, Jakarta merupakan destinasi yang tepat untuk para turis menikmati lifestyle urban yang modern, namun tidak melupakan sejarah Jakarta yang sebelumnya bernama Batavia. Kami akan membawa ke masa lalu saat kunjungan ke Kota Tua, lalu diajak mencicipi kuliner dan belanja di salah satu pusat perbelanjaan di Jakarta Pusat.
THE 3rd INTERNATIONAL CONFERENCE ON TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING 2018

Development of Intelligent Omni-Directional AGV Based Cyber Physical System and Its On-Site Implementation

Prof. Ming-Shyan Wang, Ph. D. Vice Dean of College of Engineering Department of Electrical Engineering Southern Taiwan University of Science and Technology Email: mswang@stust.edu.tw

Abstract

Since the revolution of Industry 4.0, the development of cyber-physical systems (CPSs) has become a major research topic. It is also on the top priority of industrial investigation. We intend to develop one CPS and design automated guided vehicles (AGVs) for on-site verification of logistics.

There are five topics on this issue. The first is to develop an intelligent automatic operational management platform. It will be used to collect data, control and monitor the industrial automation production lines, and provide predictive maintenance. The second to integrate several sensors to implement simultaneous localization and mapping (SLAM) for richening the map and improving the accuracy of localization. When the AGV has the ability to build the environment map and identify itself correct, it can plan a collision-free path and move to an appointed location. The title of the third is building of multi-machine collaboration and network integration system. It aims to develop the networking managements of intelligent manufacturing and carrying systems and the cyber-physical multi-machine collaboration system, to improve the efficiency of manufacturing and carrying systems. The plan of the fourth is to design and implement a Mecanum wheeled omnidirectional automated guided vehicle (MWOAGV) for logistics. The 5th topic, development of the stereo visual guidance and obstacle avoidance control system, aims to develop stereo visual algorithms for the AGVs to perform autonomous visual servo, collision-free and safe guidance. It enhances the carrier system local safe detection, recognition and guidance based on the proposed stereo visual system.
STATE OF THE ARTS ON HUMAN-COMPUTER INTERACTION

Kohel Aral
Emeritus Prof. Saga University, Lecture of Saga University, Kurume Institute of Technology
Adjunct Prof. University of Arizona
Editor-in-Chief of IJACSA, IJSA

Contents

- HCI Definition
- HCI Current Technology
  - Gesture based HCI (mainly Kinect based HCI)
- HCI: Next Generation
  - Eye-Based HCI
  - Application of EBHCI
  - Wearable Computing
- Conclusion

A variety of HCI type

- Input Output devices
- Voice input and output
- Voice recognition and voice synthesis
- Sounds interface
- Image understanding and image synthesis
- Visualization interface
- Multi-modal interface
- Multimedia interface
- Tangible interface
- AR based interface
- Virtual reality

Applications of HCI

- Wearable voice display
- Speak dogs for blind people
- Human to human communication through virtual reality space
- Distance operation with kinesthetic feedback
- Screen reader (outSPOKEN)
- Berkley System: Off-screen-model
- Visual software agent: faceology
- Multi-modal anthropomorphic agent connected with WWW information space
- Sonification
- Ear-con
- etc.

HCI Current Technology

Gesture based HCI

Mainly Kinect Based HCI
Gesture based HCI for education

Gesture based HCI for Industry
Gesture based HCI for computer input

Folder Manipulation by Tach-Mouse
Other computer input devices

Tangible Interface

- Music interface
- Carps swim on table for table tennis with water ripples

OmniTouch

Wearable Multitouch Interaction Everywhere

Microsoft

Carnegie Mellon University

HCI Next Generation
Eye-based HCI

Principle
Definition of line of sight and gaze location:

Screen
Cornea
Limbus
Scera
Curvature Center
Gaze location
Pupil Center

Principle of computer input by human eyes only:

- Gaze location: Pupil center and cornea curvature center

Success
Key
Standard Deviation of Gaze Instability

Specification of single eye of HMD:

Resolution: SXGA (800 x 600 pixels)
Supposed distance: 2m
Supposed size: 60 inch
Field of view: 42 degrees
Input type: RGB
Operable temp: 0~40°C
Size: 286mm (W) x 35.24mm (H) x 56mm (D)
Weight: 20g

200 US$}

Specification of near infrared camera:

Resolution: 1,300,000 pixels
Minimum distance: 20cm
Frame rate: 30fps
Minimum illumination: 30lux
Size: 52mm (W) x 70mm (H) x 65mm (D)
Weight: 105g

350 US$}

Writing in English:
A Practical Handbook for Scientific and Technical Writers

A Pilot Project

Project Partners:
- Darmstadt University of Technology, Germany
- University of Wollongong, Australia
- University of Electronic Science and Technology, China
- University of Twente, Netherlands
- University of Tokyo, Japan
Implementation of Eye-Based HCI with moving keyboard

- Gaze stability is significantly important for fixed keyboard → Moving keyboard
- Digital cowboy IR camera DC NCR 13U
- Visual Studio 2005 and OpenCV

Applications of EBHCI

Tokyo Times (International) on Nov. 15, 2006

‘Eyes only’ system lets computer users type just by sight

La Stampa (Italian Newspaper on Jan. 10, 2007)
Communication aid in Japanese

Eye based EWC

Eye controlled robotics help users for looking around, conversation, etc.
- Service Robot with camera at the tip of the robot for navigation
- Patient on the bed can enjoy virtual journey and conversation with some other persons

Service robot
Phoning

E-leaning

- Lecturers may watch students' gaze locations during lessons with e-table (Lecturers' desk with display)

E-table gives information at which portion of content does each student look

Correlation

- Correlation between achievement test score and the location at which student looks

<table>
<thead>
<tr>
<th>Location</th>
<th>Lecturers' Faces</th>
<th>Descriptions</th>
<th>Moving pictures</th>
<th>Other areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>#2</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>
Experiments

- One set of experiment: 10 min. walk → 10 min. rest → 10 min. walk → 10 min. rest
- One set in the morning, afternoon, and evening a day (three times a day)
- 5 days a week (Monday to Friday)
- 4 weeks a month
- In September, December, and March (three months a year) for three years (2011-2013)
### Participants

<table>
<thead>
<tr>
<th>Patient</th>
<th>Male/Female</th>
<th>Age</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>37</td>
<td>Good in Health</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>47</td>
<td>Good in Health</td>
</tr>
<tr>
<td>3</td>
<td>Female</td>
<td>39</td>
<td>Good in Health</td>
</tr>
<tr>
<td>4</td>
<td>Female</td>
<td>91</td>
<td>Weak Alzheimer</td>
</tr>
<tr>
<td>5</td>
<td>Male</td>
<td>36</td>
<td>Good in Health</td>
</tr>
<tr>
<td>6</td>
<td>Male</td>
<td>39</td>
<td>Good in Health</td>
</tr>
<tr>
<td>7</td>
<td>Male</td>
<td>49</td>
<td>Good in Health</td>
</tr>
<tr>
<td>8</td>
<td>Female</td>
<td>29</td>
<td>Good in Health</td>
</tr>
<tr>
<td>9</td>
<td>Female</td>
<td>53</td>
<td>Good in Health</td>
</tr>
<tr>
<td>10</td>
<td>Female</td>
<td>56</td>
<td>Good in Health</td>
</tr>
<tr>
<td>11</td>
<td>Female</td>
<td>58</td>
<td>Good in Health</td>
</tr>
</tbody>
</table>

### Self evaluation of physical (A) and psychological (B) stress

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Feel fever</td>
<td>5</td>
</tr>
<tr>
<td>A2</td>
<td>Sleep</td>
<td>7</td>
</tr>
<tr>
<td>A3</td>
<td>Unconfident about health</td>
<td>4</td>
</tr>
<tr>
<td>A4</td>
<td>Feel depression</td>
<td>5</td>
</tr>
<tr>
<td>A5</td>
<td>Do not want to work</td>
<td>3</td>
</tr>
<tr>
<td>B1</td>
<td>Losing thinking capability</td>
<td>3</td>
</tr>
<tr>
<td>B2</td>
<td>Losing balance</td>
<td>4</td>
</tr>
<tr>
<td>B3</td>
<td>Losing concentration</td>
<td>2</td>
</tr>
<tr>
<td>B4</td>
<td>Head ache</td>
<td>4</td>
</tr>
<tr>
<td>B5</td>
<td>Joint ache</td>
<td>3</td>
</tr>
</tbody>
</table>

### Male patient whose age is 37 (Max. total score)

Young male shows that physical stress decreases by walking.

### Correlation Matrix

<table>
<thead>
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<th>Blood Pres. (H)</th>
<th>Blood Pres. (L)</th>
<th>Heart Rate</th>
<th>No. of Steps</th>
<th>Total A</th>
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<td>Heart Rate</td>
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<td>No. of Steps</td>
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<td>Total A</td>
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<td>Total B</td>
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<td>-0.432</td>
<td>0.000</td>
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### Blood pressure (H) may be estimated with Body temp. and Heart rate (+ No. of steps and Calorie consumption) $R^2=0.549$

### Wearable computer with Arai's glass allows computer input just by sight

- **Components**
  - Arai's glass:
    - *HMD*
    - *NIR camera with NIR Light sources*
    - *Health monitor sensors*
    - *Smart Phone, I-Phone*
Conclusion

- HCI: Next Generation of Eye-Based HCI: EBHCI can be used for wearable computing → Search something with input keywords during walk
- Wearable computing with Aral's glass can be used for not only computer input but also health monitoring (Heart rate, Body temp., Number of steps, Calorie consumption, Attitude, Consciousness, Location, Blood pressure (H), etc.) → It can be used for triage for search and rescue
LIFELONG LEARNING IN THE ERA OF INDUSTRIAL REVOLUTION 4.0

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81310 Johor Bahru
Johor, MALAYSIA

1.0 Introduction

Lifelong learning (LLL) is an essential challenge for inventing the future of our societies that would enable people to develop their autonomy and sense of responsibility; to reinforce the capacity to deal with the transformations taking place in the economy which promote coexistence, tolerance and the informed and creative participation of citizens in their communities. It needs a mindset and habit for people to acquire that would enable them to take control of their destiny and society to face the challenges ahead. Today, all graduates face a world transformed by technology, in which the Internet, cloud computing, and social media create different opportunities and challenges for formal education systems. The Fourth Industrial Revolution which is powered by artificial intelligence requires certain skills that are not exactly the same as the skills that were required in the third industrial revolution where information technology was the key driver. The skills needed now are critical thinking, people management, emotional intelligence, judgement, negotiation, cognitive flexibility, as well as knowledge production and management. It creates the challenge to understand, explore, and support new essential dimensions of learning such as self-directed learning, learning on demand, collaborative learning, and organizational learning. These approaches need new media and innovative technologies to be adequately supported.

2.0 The Fourth Industrial Revolution Era

The industrial development has undergone four phases of revolution era which aligns with the innovations of technology at that particular period of time. The first industrial revolution happened in the 1800s when mechanical innovations such as the steam engine, cotton spinning and railroad came into being. It was catalysed by Newton when he formulated his laws of motion which lead to onwards motion was better understood and quantified that make it possible to design steam engines that mechanised much of the work that was traditionally done by humans. The second industrial revolution was then initiated by Faraday and Maxwell who unified magnetic and electric forces and this led to electricity generation and electric motor which were instrumental in the assembly lines that have come to dominate many industries. The discovery of a transistor which catalyzed the electronic age leads to the invention of computers and internet in the third industrial revolution while the fourth industrial revolution introduced mass production through assembly lines and electrification in the 1900s and the advent of the mainframe computers, personal computing and the Internet 1970s. The current fourth revolution is seeing an interplay between many
fields (nanotechnology, brain research, 3D printing, mobile networks and computing), creating unthinkable realities.

Figure 1: The 4 phases of Industrial Revolution

Figure 2: The Fourth Industrial Revolution Drivers

Source: https://www.linkedin.com/in/aditya-randika-1b1b5aa8/
The fourth industrial revolution (IR 4.0) is ushered in by advancements in robotics, virtual reality, cloud technology, big data, artificial intelligence, the internet of things and other technologies. It is characterised by the fusion of technologies and the blurring of the lines between the physical, digital and biological aspects of life that is powered by artificial intelligence which transforms the workplace from tasks based characteristics to the human centred characteristics. IR 4.0 relates to the paradigm that machines are now able to autonomously adapt and coordinate their tasks to meet human needs. This is achieved through the Cyber Physical System (CPS), also called Industry 4.0, Advance Management Program, Internet of Things (IoT) or Industrial Internet. This new paradigms marks the industrial era called Industrial Revolution 4.0 coined by Klaus Schwab in 2016. The convergence of man and machine will reduce the subject distance between humanities and social science as well as science and technology. This will necessarily require much more interdisciplinary teaching, research and innovation. (Bo Xing and Tshilidzi Marwala, 2017).

3.0 THE IMPORTANCE OF LIFELONG LEARNING IN IR 4.0

The concept Lifelong Learning was introduced in Denmark as early as in 1971. In the 1990s, it was promoted to enable individuals cope with a rapid changing society. It was also considered as individual- oriented. The term “life-long learners” was created by Leslie Watkins and it was used by Professor Clint Taylor (CSULA) a Superintendent for the Temple City Unified School District’s mission statement in 1993, the term recognizes that learning is not confined to childhood or the classroom but takes place throughout life and in a range of situations. During the last fifty years, scientist and technology have had a profound effect on learning needs and styles. Learning can no longer be divided into a place and time to acquire knowledge(school) and a place and time to apply the knowledge acquired (workplace). Instead learning can be seen in our daily basis from our interactions with others. It can take the form of formal learning or informal learning/self-directed learning.

Generally, learning is classified into three types: formal, nonformal and informal learning. The notions of formal, nonformal and informal learning demonstrate not only the vertical dimension of learning (learning throughout life) but also its horizontal dimension (life-wide learning). Life-wide learning helps to facilitate learners to acquire and integrate various sets of knowledge and skills in order to apprehend, advance or even invent new knowledge and skills (Ouane, 2009). The increase in the interest for lifelong learning (LLL) in the past several years is largely a consequence of the changes in society which have been caused by information technology. The Industrial Revolution 4.0 (IR 4.0) has given a new impetus to educational transformation where education experts recognise the profound impact that a myriad of technological innovations in ICT. As knowledge is now being produced at an increasingly rapid rate, technologies have become ever more complex (Bosco, 2007). IR 4.0 has changes the landscape of higher education where LLL mainstream where the capabilities to learn, unlearn and relearn new things to support the upskilling and re-skilling of competencies. In order to become competitive, the workforce need to upgrade their knowledge and reinvent their skills from time to time.
Global connectivity, smart machines, and new media are just some of the drivers reshaping how we think about work, what constitutes work, and how we learn and develop the skills to work in the future. The concept of a “100 year life” becoming the norm, and the majority of that spent studying and working, means that learning will be a lot more important, and different, for the next generations. Most people will have at least 6 different careers, requiring fundamental reeducating, whilst the relentless speed of innovation will constantly demand new skills and knowledge to keep pace, let alone an edge (Fisk, 2017). “Education 4.0” for the future of education should:

- responds to the needs of “industry 4.0” or the fourth industrial revolution, where man and machine align to enable new possibilities

- harnesses the potential of digital technologies, personalised data, open sourced content, and the new humanity of this globally-connected, technology-fueled world

- establishes a blueprint for the future of learning – lifelong learning – from childhood schooling, to continuous learning in the workplace, to learning to play a better role in society.

- knowledge is being produced at an increasingly rapid rate and technologies become increasing complex, the changing demands of today’s workplace call for workers who are adapt able to change and know how to enhance their job skills in ways that help them remain current with modern technology. (Bosco, 2007). The workforce needs to learn something new everyday to upgrade and reinvent their skills from time to time.

**Figure 2 : Talent : “Industry 4.0” Demands “Education 4.0”**

Source : Nathan Hartman, Purdue University
Lifelong learning is becoming more significantly relevant to the acquisition of new knowledge and skills required in Industrial Revolution 4.0 due to:

- **Maintain and improve skills**

  Getting employment and staying employed is more competitive than ever before. The labour market requires more specialised skills which rewards individual capital, being adaptable, knowing your industry, keeping your skills fresh and having a network of peers. Employees with insufficient levels of training or flexibility to retrain face a higher risk of unemployment and subsequently, higher incidence of poverty and social exclusion. Lifelong learning helps to drive the rapid acquisition of new skills, including AI techniques, the way we approach challenges and identify problems, and to be more creative and bring innovation to everything we do. The ones who stand out from the crowd by offering unique and value skills will have more chances to survive in the employment market.

- **Job Mobility**

  Companies are now more focused on disruption than preservation. Every firm in every industry faces the risk of being disrupted out of existence by technology or political uncertainty. Professionals have been feeling less confident about their job security since the global financial meltdown. The only way to be secure and stay relevant in our career is by expanding our skillset, create our own opportunities and take ownership over our own education even as the economy shifts. Employees should focus and pay attention to the emerging needs of their industry to meet the challenge of getting on top of industry developments. They should further their learning to equip themselves with the soft skills which are extremely attractive to companies such as adaptability, resilience, leadership, communication and the ability to solve complex problems (Fries, 2018).

- **Job Retention**

  Lifelong learning will enable us to stay updated with current development of our job scope because the rules and regulations tend to change faster than industry circumstances. Every year there are new laws passed for specific industries and new codes of practice for qualified professionals. Finance, legal, and marketing professionals need to stay ahead of the curve and be updated with the latest trends. Much of what you learn in college and university isn’t practiced regularly enough. After years of working in an industry, you get used to doing things a certain way and struggle to look at challenges with a fresh perspective. The best way to retain mental abilities and fight cognitive decline as you get older is to learn something new. This would enable you to look at the same issues from a unique angle.

- **Licensing and certification**

  In many areas, achieving and maintaining various licences and certifications is essential to keeping jobs and growing in one’s career.

  Other reasons could be summarized as follows
• Improve the mind.
• Boost up individuals’ self-esteem.
• Create a hunger for more knowledge.

In Malaysia, lifelong learning (LLL) is defined as a process for the democratisation of education though the acquisition of knowledge, skills and competencies via formal, informal or non-formal means based on workplace experiences or training. LLL is the third pillar of Malaysia’s human development agenda, alongside the basic-school systems, and tertiary education. LLL provides more opportunity to upgrade basic skills and offering learning opportunities at a more advanced levels. While formal education at colleges & universities remains an important component of the country's education system, the development of human capital can be further enhanced through enculturation of lifelong learning (LLL). The strategic thrust 3 in the 11th Malaysia Plan (2016-2010), stated that the government would accelerate human capital development for an advanced nation in Malaysia by strengthening lifelong learning for skills enhancement (Ministry of Higher Education Key Note Speech at the 2018 International Symposium on Lifelong Learning (ISLLE 2018) in Kuala Lumpur on 24th April, 2018).

LLL will become a way of life for all Malaysians where there will be high quality formal, non-formal, and informal programmes in a wide range of disciplines and topics to support both professional and personal development with learning communities in every organisation, with formal mechanisms to recognise prior experience and learning. Everyone will have access to these opportunities, regardless of income level or background. Education in the 21st century focuses on development of skilled and knowledgeable human resources, efficient and productive. This implies that plans and strategies need to be developed appropriately to ensure that these aims are achieved. With an expanding population reaching around 34.2 million and a working age group (15-64) of 26.2 million, there is a need for more employment and training opportunities. This is also reflected in Malaysia Economic Plan (NEP) which stipulates 3 goals: a high income economy, inclusivity and sustainability.

4.0 The Challenges for Lifelong Learning in IR 4.0

Education in the 21st century is all about embracing digital technology. In the near future, some of the jobs today will no longer be relevant. New jobs will emerge and these will most likely be catering to the digital age. Knowledge is growing at an exponential rate: employers need managers and employees who are creative problem-solvers, innovators who are constantly updating their knowledge and expertise, reflecting on what can be done to improve productivity, seeking to be at the cutting edge of knowledge in their field, and are good team players. Successful organisations take the notion of lifelong learning for their employees and the organisation seriously (Ordonez and Maclean, 2006).

The age of the Industrial Relation 4.0 which is brought about by digitization and technological disruptions, has the following scenarios:-
• Self Learning software robots that are intelligent enough to replace call centre telemarketers in promoting products.

• Machines in factories mass producing customized orders received online based on individual needs – doing away the need for humans toiling away at the assembly line, the sales team and maybe even the product designer.

• Requirements for multi-skilled and multi-disciplined workers in various industries who are able to do multiple jobs at one go.

• Work is on-demand and project-based, replacing regular employment.

• Present jobs ceasing to exist to be replaced by new yet-to-be-created ones (Rozana Sani, 2017).

Figure 3 : The Jobs Landscape in 2022

In the future, the Industrial Revolution 4.0 will create disruptions in the labour market by eliminating some of the low-skilled and/or repetitive jobs, and at the same time increasing the shortage of talented and highly skilled workers. According to “2017 Deloitte Global Human Capital Trends,” the problem is not simply one of “reskilling” or planning new and better careers. Instead, organisations must look at leadership, structures, diversity, technology and the overall employee experience in new and exciting ways (Bersin, Pelster, Schwartz and Van Der Vywer, 2017).

Figure 4 : 2022 Skills Outlook

The World Economic Forum (WEF) Report, “The Future of Jobs” looks at the employment, skills and workforce strategy for the future and identified the 10 key skills that employers seek for in the future:

1. Complex problem solving
2. Critical thinking
3. Creativity
4. People management
5. Coordinating with others
6. Emotional intelligence
7. Judgement and decision making
8. Service orientation
9. Negotiation
10. Cognitive flexibility

Therefore, the main challenges for LLL in IR 4.0 can be summarized as follows:

- The ability to become innovative and entrepreneurial, and have cognitive flexibility to deal with complexity because we will be co-working not only with Man, but also robots.
- The need for better communication and collaborative skills will be far more important than ever. Lifelong learners must enhance their self-learning skills to remain relevant in the era of rapid changes.
• IR 4.0 require human resources with adequate digital and data literacy. The convergence of Man and machine in IR 4.0 will mean that the disciplinary distance between science and technology, and humanities and social sciences will be reduced.

5.0 Strategies and Initiatives

IR 4.0 demands changes in the contents of not only technical education, but also education in general. New emphasis will have to be given across disciplines, on certain skills and new contents have to be added. So, new educational programmes will have to be developed to meet changing demands. In the era of IR 4.0, Education 4.0 must be able to produce highly creative graduates with the ability to think critically by:

• revising their qualification frameworks, accreditation, quality assurance, indicator and assessment systems, and establish equivalency frameworks to better recognise TVET, adult and continuing education, within-industry training, apprenticeships and nonformal programmes. Education curriculum need to be monitored, informed and continuously examined by an expert body free from political interference, which would advise schools on subject choice and make curriculum more relevant to ever changing labour market demand (IoD Policy Report March 2016). 

• making more effective use of IT and open learning systems to reach the unreached and to support on-the-job training. Recent innovation in online technology such as the creation of Massive Online Open Courses (Moocs), Personalised Learning Algorithms and Crowdsourcing enable independent learning more conveniently and cheaply than ever before, help students to study at their own pace and tailor their learning which focuses on individuals weakness and needs. Educators should expand their provision of computer-based, blended and flexible learning opportunities to enhance access to education, reduce the cost of provision and capitalize on a growing demand for alternatives learning opportunities.

• increasing the funding and provide other incentives in support of nonformal education and training (i.e. adult and continuing education, NGO and industry-based training) while maintaining (and if necessary also increasing) support for formal education to achieve national and international goals (e.g. EFA, MDGs, ESD). LLL has a key role to play in boosting productivity, contributing to economic growth and aiding social mobility. For these reasons, the government should explore financial incentives to facilitate continuous engagement in education throughout a person life (IoD Policy Report March 2016).

• enhancing more collaborations between the universities and industries to come up with with new interdisciplinary programmes. Since AI and digitization of technology in IR 4.0 are predicted to have a significant effect on our daily lives, including the way we learn, we need to prepare the younger generation and re-educate the current generation for changing work, social and cultural environments. Employers and educators should collaborate more and share practical knowledge that employers needs to ensure life long
learners develop their skills to insulate them against the unpredictability of the future economy.

- making LLL resources available in organisations to enhance skills development. Indeed, they should be required to dedicate a percentage of their annual revenue to reskilling their staff. Employers should provide their employees with the opportunity to pursue learning and training programs to enhance their careers and help them understand new AI applications to encourage a more knowledgeable workforce that’s inspired and motivated.

![Diagram: Strategies and Initiatives]

### 6.0 CONCLUSION

The world’s population should nurture the ability to continuously learn, adapt and apply rapidly changing technologies to the rapidly changing learning and work environment and adapt to cultural, economic, political and social developments. In this Industrial Revolution 4.0, the only way to survive the challenges is by adapting to the new changes and become a lifelong learner where one has to look beyond the adaptation of skills to the requirements of Industrial Revolution 4.0 and upgrade themselves with digital skills needed by the job market. LLL should be acculturated as a way of life because it is certainly the best investment that could advance one’s career and ambition by constantly reinventing and keep on creating values for their clients or employers. Investing in learning pays off for both individuals and nations, in terms of income, employment, health and other benefits.
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RELATIONSHIP BETWEEN THE SELECTED FACTORS WITH ENTREPRENEURIAL CAREER ASPIRATIONS AMONG STUDENTS OF COMMUNITY COLLEGES IN MALAYSIA

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ABSTRACT

The purpose of this study is to identify the relationship between the selected factors and entrepreneurial career aspirations among the community college students in Malaysia. The selected factors are attitude towards entrepreneurship, subjective norms, entrepreneurial self-efficacy and entrepreneurial exposure. A total of 280 students from a few community colleges in the selected states were chosen to participate in this study. Cluster random sampling was applied in selecting the samples. After the data cleaning process, 265 usable responses were used for analysis. Pearson correlation analysis was used to identify the relationship between the selected factors with entrepreneurial career aspirations. The findings in this study indicated that there is a significant relationship between attitude towards entrepreneurship (r=.597, p<.01), subjective norm (r=.327, p<.01), entrepreneurial self-efficacy (r=.362, p<.01) and entrepreneurial exposure (r=.263, p<.01) with entrepreneurial career aspirations. Based on the findings of this study, it can be concluded that attitude towards entrepreneurship is the main factor motivating students to pursue entrepreneurial career. Through the findings, the practitioners are recommended to advocate the benefits and outcomes of entrepreneurship in order to encourage students to pursue entrepreneurial career.

ANIMATION FOR IMPROVING LEARNING RESULTS OF BRAKING SYSTEM EXPERTISE

Hendro Sumual, Parsaoran Tamba, Deivy Ombuh
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ABSTRACT

The purpose of this study was to determine the effect of the use of animation in improving learning results braking system expertise in the automotive department of SMK Negeri 1 Airmadidi. The design of this experimental study nonequivalent control group design. The number of respondents as many as 28 people. The learning results data collection instrument was a test. Data were analyzed with parametric statistics, the t-test with techniques independent sample t-tests was calculated using the Statistical Product and Service Solution. The result is a significant influence on the results of the use of animated learning material braking system subjects in class X Automotive at SMK Negeri 1 Airmadidi, of student learning results that are taught by the media Microsoft office powerpoint 2010.
DESIGNING PERFORMANCE ASSESSMENT FOR MANUAL POLISHING PRACTICE IN VOCATIONAL HIGH SCHOOL
Shofa Fithriturrohmi Yusuf, Neni Rohaeni, Nenden Rani Rinekasari,
Mirna Purnama Ningsih
Home Economics Department, Faculty of Technology and Vocational Education,
Universitas Pendidikan Indonesia

ABSTRACT
This research background is based on the fact that performance assessment for polishing manual practice in vocational high school are not referred to Operational Procedure Standard (SOP). This research objective is to analyze the needs of performance assessment in polishing practice manual, designing performance assessment tools in polishing practice manual, and conducting validation test on assessment in manual polishing practice through expert judgment. The method that is used in this research is Research and Development with ADDIE Model (Analysis, Design, Development, Implementation, and Evaluation). Participants in this research are the academics in Assessment field, academics in House Keeping field, and practitioners in Hospitality field. Assessment is designed to refer to Operational Procedural Standard which covers the assessment in phases of preparation, process, and manual polishing practice result. Result of evaluation of performance assessment that has been designed is placed in the very worthy criteria. The achievement of said criteria is acquired from validation test result from the expert who judges the comprehensiveness of assessment, the assessment of practice conduct aspect and the aspect of processing marks result of manual polishing practice. Recommendation for researchers is to further develop the performance assessment in manual polishing practice.

STANDARD OPERATING PROCEDURE OF HOUSEKEEPING ADAPTION:
THE DEVELOPMENT OF ASSESSMENT TOOLS IN CLEANING BATHROOM PRACTICES AT VOCATIONAL HIGH SCHOOL
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Family Welfare Education Study Program, Universitas Pendidikan Indonesia,
Bandung, Indonesia

ABSTRACT
Work competencies in cleaning bathroom practices should be relevant to standard operating procedures housekeeping. Education and training institutions included vocational high school requires to developed an assessment tools that suitable with a works in housekeeping department. It covers the preparatory, process anahmad results practice stages. This study attempts to adapt housekeeping standard operating procedures for assessment tools development, especially in cleaning bathroom practices at vocational high school. The research used analysis, design, development, implementation and evaluation approach. Expert judgment was used to evaluate an assessment tool of cleaning bathroom practices that would be suitable to apply at vocational high school. The experts are the people whose has an expertise in assessment and housekeeping aspects, also people which work as practitioners at housekeeping department. Findings shows the development assessment tools of cleaning bathroom practices with adapting housekeeping standard operating procedures that covers the preparatory,
processes and results stages is very appropriate for the practices. The aspects regarded on the preparatory stage include the ability to prepare the tools and materials. Job performance at cleaning bathroom practices is the process phase. The last is the results phase that covering the appearance of the product that met the criteria of housekeeping standard operating procedures.

IMPLEMENTATION OF FULL DAY SCHOOL AND ITS IMPACT ON THE STUDENTS CHARACTER BUILDING IN VOCATIONAL SCHOOL
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Sebelas Maret University, Surakarta, Indonesia

ABSTRACT
The purpose of this study was to describe the effect of fulldays school on student character. This character is known through 4 indicators, such as readiness, response, learning burden, and school economy. Furthermore, this study uses an observation methods, questionnaires, and in-depth interviews, as well as a documentation. Schools involved in this research are 13 vocational schools in Central of Java are involved on this research. The number of respondents consisted of 225 students, 130 teachers and 13 head master. The results showed that, First, 91% of respondents understand the fullday school programs. Second, about 65% of vocational students like it and the rest, they are not happy with this program. Third, 88% said they were still given homework. Fourth, from the canteen perspective, we find that 39 children from 81 students stated that they often bought a meal after the program was enacted. Therefore there is a positive trend in terms of the economy after the implementation of this program. The application of a fullday school program is theoretically significantly effective. However, the implementation is still found some mistake, such as students are still burdened with many tasks outside school hours. also, the school canteen has not been prepared to meet the food needs of all students.

APPLICATION OF MULTIPLICATION FOR DEVELOPING TOURISM STUDENT SPEAKING SKILL
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ABSTRACT
Poor English skills partly result from limited practice. English teaching requires a method which provides enough time for speaking practice. In this research, Multiplication Method was used in developing students’ speaking ability where 12 students were trained to be trainers for their 36 juniors. Thus it started from one teacher who trained 12 students and later these 12 students trained 36 students. By the end of the second semester, there were 48 students who could speak English resulting from this program compared to only 5 or 6 by using normal teaching. The analysis method was qualitative method supported by quantitative data. The method and instrument of research were guided interview, systematic observation and documentation. The results of the research show that the pretest average grade of the experimental group was 64
and that of the control group was 65. After this program, the post-test average grade significantly increased to 98 while that of the control group only rose to 76. The conclusion is that the application of multiplication method is very effective in improving students’ speaking ability while multiplying the number of students who can speak English.

Bugih Cloth as Traditional Hermeneutics in Minangkabau

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ABSTRACT

Every symbol found on Bugih’s cloth can be explained as a guide for life in Minangkabau society. This is in accordance with the function and meaning of symbols contained in the Bugih Cloth, interpreting the existence of Bugih Cloth and its relationship to the behavior of indigenous peoples in Minangkabau. Therefore, the importance of researching the Bugih Cloth is required. This study aims to see the function of traditional clothing made from Sengkang Silk woven cloth that is usually worn by traditional leaders in traditional ceremonies. This research also analyzes hermeneutically (interpretation of meanings) motive forms that contain symbolic values on Bugih cloth as one of the completeness of traditional clothing in Minangkabau. The research methodology is a qualitative method, because the object to be studied is the cloth of Bugih which is a cultural expression of the Bugih community. So it can be ascertained that Bugih cloth contains elements of values, norms and symbols that are difficult to meet with other numerical, statistical and quantum factors. Values, norms, and symbols can only be met with natural (phenomenological) symptoms, symbolic and cultural interactions or by interactive model analysis. This analysis model has three main components; data reduction, data presentation and drawing conclusions or verification that are intertwined at a time before, during and after data collection. The findings of study revealed that, every symbol contained in Bugih cloth used by indigenous people can be interpreted as meaningful values and as a guideline of life and reflection of behavior in Minangkabau society.

Implementation of Integrated Quality in the Manado State Politechnic Tourism Department

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ABSTRACT

This study aims to identify and analyze the implementation of integrated quality management in the Department of Tourism Politeknik Negeri Manado. Integrated Quality Management (MMT) is a quality control system based on the philosophy that meeting the needs of the best customers is the main concern in every business. To meet every employee who is involved in the education. Motivation, attitude, willingness and dedication are the most important parts of the work culture. In this study, the main instrument is the researchers themselves, as a means of collecting data. Researchers directly observe, ask, track, understand and analyze everything.
that happens on location. The planning process has involved all the components and stakeholders and this planning has been poured into the quality objectives of the department that are temporarily implemented by the department's leaders. Management integrated quality in the tourism department has been accomplished in accordance with the joint commitment of Manado State Polytechnic level and by running the Standard Operating Procedure (SOP). Integrated quality management on affairs encounters various obstacles. Obstacles that occur among which are labor management that has not been maximal, inadequate facilities and infrastructure as well as human resources that have not contributed optimally. Alternative solutions to obstacles have been pursued by the head of department.

**NATURE STUDENTS SOFT SKILLS THROUGH PROJECT ORIENTED PROBLEM BASE LEARNING APPROACH BASED LEARNING**

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**ABSTRACT**

The quality of graduates should be strengthened to enhance the marketability after graduation. Unemployment issues among graduates in Malaysia are still reported to be high. Several factors have contributed to the occurrence of this situation including lack of soft skills in graduates. This paper discusses the role, implementation and outcomes of Siswa@Fesyen programs that have been implemented in nurturing student’s soft skills through Project Oriented Problem Based Learning (PoPBL). Siswa@Fesyen programs involves 40 final year students from Bachelor of Home Economics Education at Universiti Putra Malaysia. Qualitative studies involving observation and interviews are conducted to review programs outcomes in nurture student’s soft skills and character development. Student feedback shows that this programs has successfully achieved the main objective to nurture student’s soft skills as well as strengthening student sewing skills in producing fashion designs. Finally, the findings show that the Siswa@Fesyen programs can be a significant platform to nurture soft skills and thus provides students with the opportunity to face the work environment and life after graduation.

**DESIGN SPRINT METHODS FOR DEVELOPING MOBILE LEARNING**

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**ABSTRACT**

Mobile learning has become an alternative in the learning model. Mobile learning uses smartphones as a basis for running applications so learning content can be accessed using a smartphone. Many mobile learning applications have been created but only a few are used because the appearance and features are not attractive to users. It is very important to design mobile learning applications specifically because smartphones still have limitations in running various applications. This study aims to examine the techniques of designing mobile learning
applications quickly, easily and cheaply according to users' needs. The method used in this study is the method of sprint method design which is a fast design model for building applications effectively and efficiently. The results of this study indicate that designing using the Sprint Methods design model can engineer smartphone-based software easily and quickly. This model can significantly reduce weaknesses in making mobile learning applications. The results of this study also suggest that this model successfully formulated ideas creatively to build mobile learning applications. In conclusion, this model is very well used in building mobile learning applications easily and can be implemented quickly.

DEVELOPING ANDROID EDUCATIONAL GAMES APPLICATION FOR ENHANCING CHILDREN’S HEALTHY FOOD SKILL
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ABSTRACT
This study aims to develop Edu game of Ayo Memasak Bersama that is feasible and effective to improve procedural cognitive about making a healthy food menu for kindergarten children in group B. The research design used Research and Development (R&D) with Borg & Gal model. Respondents were 20 children. Data collection techniques used observation, interviews, and questionnaires. The product produced is feasible, the material expert's feasibility test of 98% with the criteria of "Fulfilling the feasibility aspect." The media expert has obtained a feasibility test of 96% with the criteria of "Fulfilling the feasibility aspect." Based on the feasibility assessment of operational field trials (final field trials) by students, the results revealed 95% with the criteria of "Feasible." By using android Edu game of Ayo Cooking Bersama, there is an increase of effectiveness in procedural cognitive early childhood with a value of 88.4% with the criteria of "high product effectiveness."

THE EFFECTIVENESS OF USING INTERACTIVE CD MEDIA ON CONTINENTAL CAKE PROCESSING TO IMPROVE LEARNING OUTCOMES OF COURSE PARTICIPANTS IN CULINARY
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ABSTRACT
This study analyzes the effectiveness of using interactive CD media on continental cake processing to improve learning outcomes of course participants in culinary. This research carried out at Pusat Pelatihan Kerja Daerah (PPKD) of Vocational Training Center majoring in culinary art consisting of South Jakarta, East Jakarta, West Jakarta, and Central Jakarta. The research used quasi-experimental. Improved learning outcomes before and after using
interactive CD media on continental cake processing of course participants obtained \( g \) of 0.769 and categorized as high. Improved learning outcomes in the control group using handout media obtained 0.649 and categorized as a medium. Effectiveness testing applied by handout media in the control group of the course participants' showed the post-test value of 70% and categorized as ineffective scale. Effectiveness testing applied by interactive CD media and videos in the experimental group of the course participants showed the post-test value of 85% and categorized as effective scale. F test analysis showed the value of 5.513, while the Ftable value is 2.27. Then Fcount > Ftable, Ho is rejected. It means that there are differences in group learning outcomes using conventional learning media and interactive CD. In conclusion, the learning continental cake processing using interactive CD is more effective than handout media.

DEVELOPING AND USING MULTIMEDIA EFFECTIVELY FOR CIREBONESE LANGUAGE LEARNING
Ahmad Ripai, Basuki Wibawa, Asmaniar Z Idris
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ABSTRACT
This study employs the research and development model of Borg & Gall and Dick & Carey involving students of SMPN 4 Kota Cirebon. This study aims to develop and Using Effectively multimedia Cirebonese language learning for the junior high school of the eleventh-grade students. To find out the results of the content of multimedia, instructional design and instructional media experts validation were conducted. In addition, individual, group, and field try out were conducted. The try-out process involved the experts of Cirebonese language multimedia and instructional design. It also involved six students an individual (one to one) try out, fifteen students for group and thirty-four students for the field try out. The results showed, first, because \( t, 3.0569 \times 10^{-18} \) or \( = 3.0569 \times 10^{-18} \) or \( = .000000000000030596 \) smaller than \( t \) table at a significance level (\( \alpha \)) amounted to 2.034515 0.05, then it rejects Ho and accepts Ha. It can be concluded that the Cirebonese language learning using developed instructional multimedia is effective in improving students' learning outcomes.

DEVELOPMENT OF ANDROID-BASED ELIN GAME AS LEARNING MEDIA FOR INDUSTRIAL ELECTRONICS
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Informatics Education Studies Program, Electrical Engineering, Faculty of Engineering, State University of Jakarta, Rawamangun, Indonesia

ABSTRACT
Lab Learning on Electronics Industry is a must course. This is necessary for students so they have good skills. Lab Learning need practice equipment that enough to fit the quantities of students. But in fact the quantities of material and practice equipment are not being sufficient. In addition there is no learning media that can support the courses. This study aims to develop lab learning media with technology based on game with android-base that can help the students to understand the lab course everywhere, all the time. This study using Research and Development Method (RnD) with Model of Multimedia Development Life Cycle (MDLC).
This study is done through six stage that is: 1. Concept; 2) Design; 3) Collection of material; 4) Assembly; 5) Testing; and 6) Distribution. The evaluation process feasibility learning media done by granting the survey to Media Experts, Lecture experts, and respondents trial use. Based on the assessment field test by students for Industrial Electronics they can get 88.27% counted as very good. Android-Based Elin Game as Learning Media in Industrial Electronics is very reasonable and effective for teaching.

MAPPING OF FAMILY LITERACY AND CULTURAL LITERACY IN FAMILIES
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ABSTRACT

This study aims to determine the level of family literacy and the level of cultural literacy in families. The study used a survey method for 100 mothers as respondents. The research took place in Segaran Village, Batujaya District, Karawang District, Indonesia. Research found that family literacy was at a low level (score 2.50 on a 1-5 scale). Cultural literacy in the family is also at a very low level (score 1.69 on a 1-5 scale). The level of family literacy found that 7% of respondents were in very low literacy levels, 51% in the low category, 41% in the medium category, and only 1% in the high category. Based on the level of cultural literacy in the family it was found that 60% of respondents were in the very low category and 40% of respondents were in the low category. Family literacy is positively correlated with cultural literacy in families with a correlation coefficient of 0.395. Family literacy contributes to cultural literacy in the family of 0.156%. Based on the results of the research it was concluded that family literacy was in the low category and cultural literacy was at a very low level. To improve cultural literacy can use intervention through family literacy.

DEVELOPMENT OF ELECTRONIC LEARNING DESIGN 3 STUDY PROGRAM OF VOCATIONAL EDUCATION IN ELECTRONICS ENGINEERING JAKARTA STATE UNIVERSITY
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ABSTRACT

This research is a type of Research and Development (R & D) research that aims to develop learning design in Electronics 3 courses in Vocational Education in Electronics Engineering, Jakarta State University. The learning design development stage includes: (1) Analysis phase; (2) Design phase; (3) Production stage; (4) Evaluation stage and (5) Trial phase. Data collection methods in this study include testing the feasibility of material content by 2 material experts, the feasibility of the media construct by 1 media expert and the feasibility test of use to the 5th semester students of Electronics Engineering Vocational Education at the State University of Jakarta by giving questionnaires to the three aspects. Data analysis techniques using qualitative and quantitative descriptive analysis techniques. The results of this study indicate the
percentage of feasibility of the development of learning design is 91.5% for the feasibility of content from material experts, 83.40% for the feasibility of media constructs from media experts, and 86.4% for the results of testing the use of students. Of the three results, the development of learning design is categorized as very feasible to be used as a learning design for Electronics 3 in Vocational Education in Electronics Engineering, Jakarta State University. The results of data analysis stated that (1) Electronic 3 learning design can improve learning outcomes; (2) students have satisfaction when implementing this learning design. The findings of this study are to produce a comprehensive learning design in accordance with the learning objectives of Electronics 3.

STUDY OF ANALYSIS ON THE CHARACTERISTICS OF LEARNING STYLE STUDENTS VOCATIONAL EDUCATION OF BUILDING CONSTRUCTION STUDY PROGRAM, FACULTY OF ENGINEERING
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ABSTRACT

This study aims to identify the characteristics of the learning styles of students of Vocational Education Building Construction Study Program, Faculty of Engineering, Jakarta State University. The approach used in this study is a quantitative approach with survey methods. The population in this study were students of Vocational Education Building Construction Study Program, 2017/2018 academic year. The study sample consisted of 77 students who had taken courses in the subject of Vocational Education Building Construction questionnaire. Sampling technique using Purposive Random Sampling. Data collection using The Center for Innovative Teaching Experiences (CITE) questionnaire. Learning Styles Inventory from Babich, Burdine, Albright, and Randol, (1976) was formulated at the Murdoch Teachers Center in Wichita, Kansas. There were 9 learning styles identified, namely learning styles: (1) Auditory Language, (2) Visual Language, (3) Auditory Numerical, (4) Visual Numerical, (5) Tactile Kinesthetics, (6) Individual Learning, (7) Group or Social Learning, (8) Expressive Oral, and (9) Expressive Writing. The research data were analyzed using descriptive statistics. The results of the study show that the majority of learning styles possessed by of Vocational Education Building Construction Study Program students are social groups, which means that they prefer group learning (32.22), followed by Tactile-Kinesthetic learning styles (31.89) and Visual Numerical (31.37). This shows that in addition to learning groups, students of the of Vocational Education Building Construction Study Program have a learning style that involves themselves as an experience and learning with real examples.
THE DEVELOPMENT OF PSYCHOMOTORIC APPRAISAL INSTRUMENT IN FUNDAMENTAL BARBER PRACTICE AS THE EFFORT IN INCREASING LEARNING PROCESS OF BARBER LECTURE SUBJECT

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ABSTRACT

The purpose of this research is in order to increase an effective learning in the subject of barber through the appraisal of university student learning result to the development of appraisal instrument of barber subject which is valid, reliable, and effwxtive. Time and place of this research be implemented from the process of observation to the reporting which is calculated from January – October 2018, be implemented in study program of beauty ang health education of Jakarta State University UNJ, H Building, 3rd Floor 307th room Jalan rawamangun muka, East Jakarta. The result of of this research conclude whereas psychomotoric appraisal instrument in the practice of barber that have been develop ed fulfill the criteria of reliable base on the result of practice appraisal instrument test result namely, about 0, 805 which point out the level of instrument reliability in good category because of $\alpha > 0.7$. Appraisal instrument for the practice of barber that have been developed, have been stated effective bade on the result of appraisal instrument effectivity for practice namely 0,4 which point out whereas the instrument that be made have level of effectivity in the middle thing because it is in the rage pf 0,3-0,69.

ANALYSIS OF STUDENTS ATTITUDE HOME ECONOMICS GROUP STUDY PROGRAM IN THE FIELD OF SCIENCE AND ITS INFLUENCE ON SCIENCE LEARNING RESULT

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ABSTRACT

Most of college students of Advertisements from non-Mathematics and Natural Science (MIPA) Vocational High Schools / Vocational High Schools are very disadvantaged in the science materials in the class. The study program in the Home Economics (IKK) FT UNJ including the IPS group gave science courses such as chemistry and physics. The purpose of this study was to determine the attitudes of students in the IKK study program in the fields of study and whether there was an influence on the results of learning science. There were 214 IKK students who were sampled, namely 53 people of food study program, 54 people of fashion, 53 of PKK and 54 of them for makeup. This research method is based on correlational surveys. Characteristics of data collected by TOSRA (Test of Science Related Attitudes), which is divided into 7 aspects, namely social implications of science, scientific norms, public attitudes, application of attitudes, preferences, and interests in time interests. on science, and a career interest in science. Data on student behavior when analyzed qualitatively. The results of the study show that social practices are sufficient, self-concept is sufficient, attitudes are lacking, application of adequate attitudes, preferences. Enough learning, interest in free time at
work, and interest in careers in the field of science disagree. In addition, there are several factors that can be used to study things: p>0.05 with an increase in attitudes toward learning outcomes is the remaining 41% are repatriated by other factors such as school origin, level of intelligence, social environment and other factors.

THE RELATIONSHIP OF LEARNING COMPETENCE LEARNING OUTCOMES WITH THE IMPLEMENTATION OF PKM IN TRAINING SCHOOLS
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ABSTRACT

The purpose of this study to determine the relationship of learning outcomes of learning competencies with the implementation of the practice of teaching skills in training schools. This study carried out in the Jakarta State University teaching skills practice unit, namely schools used as training schools, regional education offices, and Jakarta State University. This research descriptive research that is trying to express what happened in the field to a starting point and how to develop further. While the research method used the survey method. The research sample carried out by using purposive sampling technique, taking into account the elements contained in the population. Data analysis techniques using descriptive analysis and inferential analysis. This study found a relationship between learning outcomes of learning potential with the implementation of the practice of teaching skills in schools. So that the subject of learning competence can developed and improved.

THE EDUCATION MODEL FOR AUTHORIZED OUTDOOR AND TERRIBLE AREAS CONCERNING DIVERSITY OF ENVIRONMENTAL, SOCIAL AND CULTURAL CONDITIONS (BASED ON LOCAL WISDOM)
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2Vocational Education Program, Family Welfare Studies Program,
State University of Jakarta, Indonesia

ABSTRACT

The purpose of this study is to design a model of education that is suitable for the foremost, outlying and underdeveloped areas. Research approach used to research and development with Borg and Gall model (2003). The method used in this research is descriptive research method using Focus Group Discussion approach with resource persons from various circles ranging from Education Office, Headmaster and Teacher, lecturer of University, cultural public figure, and parents, amounting to 29 people. The location of the research was conducted at schools in 3 districts of East Lombok-West Nusa Tenggara, Manggarai-East Nusa Tenggara ,and Hulu Sungai Utara-South Kalimantan. Respondents in this study are education offices, principals, teachers, community leaders in 3 districts in Indonesia. The results show that the model of education in an authorized, outdoor, and terrible areas with local wisdom that prioritizes local
wisdom will be effective by using the principles of "ASICT" (Assimilated, Supporting, Innovative, Comprehensive, and Technological Used) developed will be able to accelerate and improve the achievement of the quality of education and is expected to be an alternative model in the implementation of education in lagging regions.

ANALYSIS OF FAMILY TYPOLOGY BASED ON FAMILY DEVELOPMENT STAGE
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ABSTRACT

The aims of this study to analyze family typology based on the stages of family development in people living in cultural heritage areas. This study used a survey method involved 100 families were selected by simple random sampling of 4 hamlets in Segaran Village, Batujaya District, Karawang Regency, West Java. Family typology includes four dimensions, namely regenerative, resilient, rhythmic and traditionalistic, each stages consists of two indicators and produced 8 family typologies. Instruments in family typology are developed with reference to McCubbin and Thomson (1987). Data were analyzed by descriptive using nest structure test and relationship test. The test results showed that most of the Segaran villagers were at development stage the launching family, teenage family and schoolage family. The dominant family type of the three family stages is the family type of regenerative family (in dimension 1), resilient family (in dimension 2), rhythmic family (in dimension 3) and traditionalistic family (in dimension 4).

THE USE OF PRODUCTION BASED LEARNING MODELS TO IMPROVE STUDENT LEARNING OUTCOMES IN STUDY OF CARVING WORKING TECHNIQUES ON SKILL COMPETENCE
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ABSTRACT

The title of the research is the use of production based learning models to improve student learning outcomes in carving work engineering subjects in the competence of creative crafts of wood and rattan craftsmanship at State Vocational High School 14 Bandung. This study is a classroom action research conducted on carved work engineering subjects with basic competencies to make products with deep carving work techniques in the creative skills of wood and rattan craft expertise in State Vocational High School 14 Bandung. This research was carried out in two cycles. Data were obtained through observations using observation sheets, questionnaires, and tests. The results of the study show an increase in learning outcomes at the end of the cycle. From cycle I which reached the classical completeness 36.67% increased to 90.32%. The results of observations on the activities of students' activities during the learning
process also showed an increase of 60.27 scores in the first cycle with the category quite active and 97 at the second meeting or cycle with a very high category. For the observation activities, teacher activities in cycle I became 67 with the category of ckup and in the second cycle it increased by a very high category with a score of 99. This proves that the production based learning model can improve learning outcomes.

THE EFFECT OF SUPERVISION, WORK CULTURE, AND TRUST TO PERFORMANCE OF ELEMENTARY PUBLIC SCHOOL PRINCIPAL OF WEST JAKARTA CITY
Muhammad Fahmi Akbar, Ma'rus Akbar, Mukhneri Mukhtar

ABSTRACT
The purpose of this research to determine the effect of supervision, work culture, trust, and attitudes to the performance of public elementary-school principal of West Jakarta city. To describe how much influence the effect of supervision, the culture, and trust to performance of elementary public principals of West Jakarta city. The research method used is the survey method with causal techniques. Whereas to analyze the existing or influence between one variable with another using variable path analysis. The population of West Jakarta city, and sampling procedure using the technique of sample random sampling as much as 80 principals were taken randomly. Results of the study found that the supervision of variable turned out to have effects directly to the performance; work culture also has effects directly to the performance, and trust has effects directly to the performance. Whereas trust variables prove to have direct influence from supervision and work culture. Based on the findings above, it can be concluded that the variations that occur on performance variables are supervision, work culture, and trust variables.

NEED ANALYSIS TO DEVELOP ANTICORRUPTION BEHAVIOR OF EARLY CHILDHOOD THROUGH PARENTING EDUCATION MODEL
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ABSTRACT
This articles publish need analysis results as part of research and development is to develop a parenting education model to improve the parenting of anti-corruption character in early childhood. Research was found that parents do not know the character of anticorruption, not aware of the anti-corruptive behavior performed by the child, has not been able to apply the method of parenting to develop anticorruption character of early childhood. It means that is necessary a model of anti-corruption parenting education.
IMPACT OF POLICY KARAWANG CITY GOVERNMENT IN TOURISM DEVELOPMENT TO SUPPORTS FAMILY ECONOMICS IN BATUJAYA VILLAGE
Hamiyati, Shinta Doriza

ABSTRACT

The aim of study is to analyze the Kerawang City Government's policy in developing tourism that supports the family economy in Batujaya Village. The method of study is descriptive qualitative research method. Data analysis uses interactive analysis model through data reduction, data presentation and data verification techniques. The results of study: (1). lack of coordination and program synchronization between agencies, thus causing the implementation of tourism development not in accordance with its planning; (2) There is a tendency to decrease as a result of the program not being implemented; (3) the impact of tourism development has not yet felt the benefits of both economic, socio-cultural, environmental and political aspects for the local community; and (4) need a new policy that refers to Undang-Undang Number 47 of 1997 article 49 concerning the criteria for tourism in space.

DEVELOPMENT OF TEACHING MATERIALS INTRODUCTION TO STATISTICS USING E-LEARNING FOR STUDENTS OF JAKARTA STATE UNIVERSITY
Yuliatri Sastra Wijaya, Erdawati Kamaruddin, Muhammad Ficky Duskarnaen
Informatics Education Faculty of Engineering Universitas Negeri Jakarta

ABSTRACT

The results of this study introductory statistics teaching materials for students of Jakarta State University in the form of e_learning which can used online, making it easier for students and lecturers to develop, apply, discuss, assess the teaching material to teach. This research carried out with G & D's R & D research model, which consisted of 10 steps, from planning to testing the effectiveness of the program. This study consists of 3 stages, which now run the second stage. In this second phase, a trial conducted for 80 Informatics Education students, with an average of 83.5. This means e_learning can improve student learning outcomes. The results of the questionnaire answered by students showed that 83% of students stated that using e_learning fun and can repeated material that has not mastered and can discuss with friends online. The improvement of the Lecturersa revision of some teaching materials about typos and interpretation.
ANALYSIS VALIDITY AND REALIBILITY AN INSTRUMENT THE MEASUREMENT OF THE SELF-ACADEMIC CONCEPT IN A COLLEGE STUDENT OF COSMETOLOGY OF ENGINEERING FACULTY STATE UNIVERSITY OF JAKARTA
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ABSTRACT
This study discusses how validity and reliability of the self-concept academic research. There is one modified instrument, Academic Self-Concept Scale (ASCS). This study involved respondents who were entirely female. The self-academic concept is important to be known, because it is the determinant factor of students in their academic ability. High or low-profile concept of student academic, associated with achievements will be achieved. The questionnaire tested in the study can be used to determine the student's academic self-concept measurement model. This research aims to generate empirical validity and reliability using the Rasch Model. The study was conducted at 100 college students of the Cosmetology Studies, Engineering Faculty, State University of Jakarta. Reliability value based on cronbach Alpha for a questionnaire that is at a table of 0.618 that can be concluded that the questionnaire is valid because of the ≥0.5. Meanwhile, items that are less reliable with value below 20 items.

CAREER GUIDANCE SHORTAGES IN INDONESIAN VOCATIONAL HIGH SCHOOL
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ABSTRACT
Career guidance as an integral part of national education system plays a prominent role in vocational education to facilitate the students in achieving their self-reliance. The discussion on their relationship raises stimulating evidence of weaknesses in its practice in Indonesian vocational high school (VHS). This article highlights the substance of career guidance shortages and the implications from its tradition. Thoroughly analysis shows that career guidance should be simultaneous with vocational education programs to prepare graduates who standing by to employ. The shortages of career guidance in VHS means a small portion, non-stipulate of achievement standards, and hardly congenial to vocational education characteristics. The revitalization act, labor market and skills trends, and career pathways affiliate to the necessity of particular career guidance in VHS. It should be noted that specificity of career guidance in VHS is aimed to strengthen the employability skills development.
TVE TRANSFORMATION: VOCATIONAL LECTURES READINESS AND CHALLENGES IN TEACHING VOCATIONAL SUBJECTS IN VOCATIONAL COLLEGED OF HOME ECONOMICS
Anis Zakaria, Nur Amirah Azmi, Rahimah Jamaluddin, Rosnani Jusoh

ABSTRACT

In line with the Industrial Revolution 4.0, the latest approach in world view economy, Malaysia has to prepare the work force to face the new paradigm in work setting background. The first change will be human resources across all sectors, including in the training sector, to meet the new requirements of the industrial sector. Lecturers and teachers are the backbone of education system as well as the implementer of the policies set by the government through the Ministry of Education Malaysia. In order to achieve government’s aspiration, the lecturers themselves need to be prepared and competent to teach students more effectively to prepare student facing new working paradigm. In respect of that, this study was carried out to examine the readiness of vocational lecturers in the implementation of vocational related courses teaching in Vocational College (VC) of Home Economics. This research has three objectives, namely, identifying the level of lecturers’ knowledge and understanding of Vocational course syllabus, identifying the level of lecturers’ confidence in teaching Vocational, and identifying the problems that exist in teaching Vocational in Vocational College. The sample of this research were twenty Vocational lecturers in Kolej Vokasional ERT Setapak (Selangor), Kolej Vokasional Dato Undang Haji Muhammad Sharip, Rembau (Negeri Sembilan) and Kolej Vokasional Sultan Abdul Samad, Banting (Selangor). The readiness of lecturers was viewed from two aspects: the lecturers’ knowledge and understanding of Vocational course syllabus (Mean = 4.20) and lecturers’ confidence in teaching Vocational (Mean 4.05). There are three main problems in teaching Vocational, which are the burden of duty (Mean = 3.57), reference material (Mean = 3.70), and equipment problems (Mean = 3.76). Qualitative data, on the other hand, reveals that the teaching methods and lecturers’ knowledge are partially not aligned with the teaching at diploma level, usage of technology apparatus and applications, and references of knowledge are the problems faced by the lecturer to cop up with the new industrial revolution. This study also provides few recommendations to further improve lecturers’ readiness in the implementation of vocational courses teaching in Vocational Colleges.
THE EFFECT OF LEARNING AND METACOGNITION STRATEGIES ON MATHEMATICS LEARNING OUTCOMES IN VOCATIONAL SCHOOL BY CONTROLLING INITIAL MATHEMATICS KNOWLEDGE

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ABSTRACT

The research objective is to study the effect of learning and metacognition strategies on mathematics learning outcomes. The study used a quasi-experimental method with 2x2 treatment by level design at SMK Negeri 7 Bekasi, with a sample of 70 students. Data analysis with ANKOV A. The results: (1) the mathematics learning outcomes of students who were taught using inquiry learning strategies were higher than students mathematics learning outcomes taught using expository learning strategies, (2) there was an interaction between learning strategies and metacognition of students mathematics learning outcomes, (3) students who have high metacognition, the learning outcomes of mathematics taught using inquiry learning strategies are higher than the mathematics learning outcomes of students who are taught using expository learning strategies, (4) students who have low metacognition, learning outcomes of mathematics taught using inquiry learning strategies are no different from students who taught using an expository learning strategy after controlling students initial knowledge of mathematics.

DEVELOPMENT OF DRAPIING LEARNING MEDIA THROUGH DRESS FORM IN DETERMINING THE PEAR BODY SHAPE COMPENSATION RATIO ON CUSTOM SKIRTS

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ABSTRACT

Compensation ratio in pattern is the ratio determined to reduce the size of the clothing pattern. The compensation ratio in the pattern can be used on the developed skirt to be wider on the right and left to get the even edge of the skirt edge. Pattern compensation ratio can be used on standard skirts or fully developed skirts. The results of applying the pattern compensation ratio on the skirt according to the type of material used. Application of compensation ratios gives good results in materials with light, thin and translucent properties, but in materials with slightly heavy, shiny and rather thick properties it is still necessary to make corrections to the ratio of pattern compensation used that has not been able to produce the same edge of the skirt that is parallel to the floor.
ON JOB TRAINING OF VOCATIONAL COLLEGE STUDENT AND TS IMPACT ON ENTREPRENEURSHIP CAREER
Datin Rosnani Jusoh¹, Mohd Fadhil Mohtar², Rahimah Jamaluddin¹, Anis Zakaria¹
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ABSTRACT
On the Job Training (OJT) give students exposure to real working conditions and skills knowledge to work in the industry after graduation. The purpose of this article to identify the level of entrepreneurial intention by the employer during the OJT. This study used descriptive survey method in which respondents of the study consisted of 162 of the Vocational Agriculture College from various agricultural programs underwent the OJT. The data were collected using a questionnaire consisting student demographics, entrepreneurial intention and supervision level. Results of the study found that the entrepreneurial intention was at a high level (M = 4.05, SD = 0.75) and the level of supervision of employers towards the agricultural students at the Vocational College of Agriculture was also at a high level (M = 4.13, SP = 0.61). The findings also found that there was a positive and significant relationship between employer supervision. The findings also found that there was a positive and significant relationship between employer supervision and entrepreneurial intention (r = 0.495, p = 0.00

VALIDITY AND REALIBILITY AND CLOTHING DISPOSAL BEHAVIOUR INSTRUMENT
Arasinah Kamis, Fara Najwa Ahmad Puad, Rahimah Jamaludin

ABSTRACT
An instrument of Sustainability and clothing disposal behavior (SCDB) is used to measure factors that influenced clothing disposal behavior. These factors involve 6 sub-constructs which are sustainability clothing disposal behavior, attitude, awareness on environmental issues, behavioral control, social norms and social action. The approach used was quantitative survey. The sample was selected using stratified and simple random sampling techniques. This instrument was administered on 393 fashion students in Fashion Design and Textiles (SRFT in Malaysia and Indonesia. Confirmatory factor analysis (CFA) was used to evaluate the construct validity of this instrument. The SCDB have reached the Cronbach alpha > 0.07 for the reliability of six sub constructs. The findings show that the measurement model is in accordance with the data and is accepted based on the goodness-of-fit measure of CMIN χ²=1984.484, degrees of freedom (df) 838, CMIN/df=2.368 (≤5.0), incremental fit CFI, IFI (≤0.9), and absolute fit RMSEA=0.8(≤0.8) further proved the construct validity. This instrument also obtained consistent and good internal validity which were convergent and discriminant validity. In summary, the research findings showed that the SCDB instrument achieved sound psychometric properties and can be used to measure the clothing disposal behavior. The findings of this study are also expected to provide awareness to the public regarding the importance of recycling textile products and clothing to reduce pollution. Knowledge and practice in sustainability clothing disposal behavior give an awareness to consumers about the importance of maintaining and to protect our environment.
IDENTIFICATION OF TECHNICAL SKILLS ACHIEVEMENTS OF STUDENTS BASED ON INDONESIAN NATIONAL QUALIFICATION FRAMEWORK (KKNI)
Rina Febriana\textsuperscript{1}, Muhammad Aries Triyanto\textsuperscript{2} and Annis Kandriasari\textsuperscript{2}
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ABSTRACT

The purpose of this study is to identify in detail the technical skills students based on the Indonesian National Qualification Framework (KKNI) which consists of two aspects, namely special skills and knowledge of students. This research uses descriptive quantitative research method with independent variables which are the main observations. The treatment of this study was to observe the student practicum directly to identify aspects of specific skills and take theoretical values in the subject area of expertise to identify issues of knowledge. In the element of special abilities have 18 indicators that can detect, while aspects of culture have 23 signs that can be determined. The results of this study indicate that the average student technical skills assessment based on KKNI on issues of unique skills and knowledge is in the very high category with a score of 97.3% for aspects of individual abilities and a score of 90.3% for aspects of expertise.

IDENTIFICATION OF NUTRITION AND YOUNG WOMEN REPRODUCTIVE KNOWLEDGE IN THE MAKING OF INTERACTIVE LEARNING VIDEO BASED ON COMMUNITY EMPOWERMENT
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ABSTRACT

The purpose of this study was to identify in detail the nutritional knowledge and reproductive health of adolescent girls as an exploration effort in making interactive learning videos based on community empowerment. In general, this study uses a research and development approach by adopting ADDIE Analysis, Design, Development, Implementation, and Evaluation models. At the Analysis stage, it was carried out by exploiting knowledge of nutrition and reproductive health of female adolescents in the age range of 14-20 years, carried out by a survey method for young women aged 14-20 years. The results showed that mastery of nutritional knowledge in young women scored 65.65, and aspects of reproductive health knowledge scored 75.25. The conclusion, in general, is that young women’s experience of nutrition and reproductive health is still in the low category, so further research is a need in the form of Learning Media Development for Increasing Mother Knowledge of Nutrition and Reproductive Health of Community - Based Female Adolescents.
DEVELOPMENT OF HARDWARE IN-THE-LOOP SIMULATION CONTROL SYSTEM FOR DIPLOMA STUDENT PRACTICUM
Muhammad Rif’An

ABSTRACT
This paper presents a hardware simulation with a hardware-in-the-loop principle for control system analysis dedicated to the practice of diploma students. The real system is simulated using a neural network based system model and the controller uses digital control. The system model is built based on real system input-output data. meanwhile, control of the system is built with digital PID control. Students can tune PID parameters and provide disturbance to the system model. The results of this study indicate that the system model is able to represent real systems and PID controllers are able to improve system performance when there is disturbance.

A SYSTEMATIC LITERATURE REVIEW OF SHORT TEXT CLASSIFICATION ON TWITTER
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ABSTRACT
Twitter is a microblogging service that allows people to briefly communicate via messages containing only 140 characters. With these limits, twitter can be categorized as a short text document. And with the limited number of words makes the tweet it difficult to classify. This study aims to generate classification maps and find out the best method to classify short text documents especially on twitter by analizing literary data using systematic literature review analysis method. The process of collecting literature data is done by searching on several digital libraries with search strings that have been made based on the existing research question with the publication limit between 2013-2017. The results of this research indicate that from 1253 literature, there are 41 literatures that deserve to be analyzed. And based on 41 existing literature found that there are 21 methods of classification used for twitter classification. With the most widely used method is Support Vector Machine (SVM) and the best method is Word2Vec Logistic Regression with an accuracy of 95.8%.
EFFECT OF COMPETENCE TEACHER AND STUDENT LEARNING ENVIRONMENT PROGRAM ON STUDENT ACHIEVEMENT LIGHT VEHICLE ENGINEERING

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ABSTRACT

This study aims to determine; (1) the influence of teacher competence on student achievement; (2) the influence of the learning environment on student achievement; and (3) the effect of teacher competence and learning environment on student achievement. The study population was all light vehicle engineering students at SMK Negeri 34 Jakarta, the sample was grade 11 light vehicle engineering as many as 31 students. The method in this research is survey method with associative approach. The study used secondary data collection techniques with a questionnaire (questionnaire); and primary data even semester learning achievement. The data analysis technique used is simple regression, multiple regression, and F test with a significance level of 0.05. The results showed that; (1) there is a positive effect of teacher competence on student achievement test results Fcount > 16.55 Ftable 3.32 amounting to 13.21%; (2) there is a positive effect of the learning environment on student achievement test results Fcount > 17.55 Ftable 3.32 amounting to 14.21%; (3) there is a positive effect of the teacher competence and learning environment on student achievement test results Fcount > 10.33 Ftable 3.32 amounting to 18.02%.

THE EFFECT OF TEACHER COMPETENCY AND TEACHING COMMITMENT TO STUDENT LEARNING RESULTS MACHINING ENGINEERING SKILLS PROGRAM

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ABSTRACT

This research is intended to find; (1) the influence of teachers on student learning outcomes; (2) the influence of commitment to student learning outcomes; And (3) the influence of teachers and commitment to student learning outcomes. The research population is all students of machining technique of Vocational High School 34 Jakarta and productive teacher, the sample is the 10th grade students of machining technique as many as 31 students and productive teachers as many as 12 people. The method in this research is survey method with associative approach. The study used secondary data technique with questionnaire; And primary data of learning result of even semester. Data analysis technique used is simple regression, multiple regression, and F test with significance level 0,05. The results showed; (1) there is a positive influence of teacher competence on student learning result F test of 17,15> F table 3,32 equal to 13,8%; (2) there is no positive effect on student learning outcomes test result F count 1.44> F table 3.32 of 1.6%; (3) there is a positive influence of teacher competence and learning commitment of student learning result of F count 5,65> F table 3,32, 31,02%.
DEVELOPMENT OF PALANG PINTU AS AN EDUCATION IN WENETIE VAN JAVA (BATAVIA)
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ABSTRACT
In the midst of the proliferation of Betawi cultural creations, one that is considered to be an intangible cultural heritage is (open) Palang Pintu or otherwise known as Palang Pintu. Palang Pintu is one of the events in the Betawi wedding ceremony. The meaning and philosophy character of the Betawi people is reflected in Palang Pintu. This research was produced using various sources of contemporaries in the form of staatsblad, manuscripts, newspapers, magazines, and photographs with the aim of producing data. Palang Pintu is an educational part of the cultural values of the Betawi People in Batavia. Palang Pintu currently, is no longer only held in traditional Betawi wedding ceremonies but for various other events such as circumcision or welcoming guests.

THE DEVELOPMENT OF BLISH (BLENDED LEARNING BASED ON HANDPHONE) FOR COMPUTER SYSTEM SUBJECT ON XI GRADE OF SMKN 1 BENGKULU CITY
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ABSTRACT
Education has an important role to improve the quality of human resources that made the younger generations could develop their potential optimally. Vocational High School (SMK) is one of the educational institutions that has prepared their graduates to enter the working world. One of the compulsory program in Vocational High School is the students were carried out on the field work practices (PKL). To provide learning access for students as long as they stayed in industry area, so it was necessary to give learning on blended learning by using handphone as a learning media. In order to get students’ learning outcomes be maximize, so the development of this learning should be done by applying Research and Development patterns that was adapted from The Steps of System Approach Model of Educational Research and Development (R & D), Fourth Edition and Seventh Edition by Borg and Gall. Blended learning models that would be developed are Norman Vaughanand Flipped Classroom Models. Learning materials were developed are computer system subject. The measurement of result development was done by formative evaluation that consisted of one to one evaluation with expert, one to one evaluation with learner, small group and field trial.
“ASICT” LEARNING MODEL IN VOCATIONAL EDUCATION IN 3T AREA’S
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ABSTRACT
The Result of this study are presented that the Asict model are fit in vocational school in the remote area, and the best ways of teaching and learning in those kind of situation and place based on the study. Technological Use aspect are refuse and rejected to be implement, because of the knowledge about IT literacy and also the supporting infrastructure are not good in the 3T Place. The models also suitable to implement in the big city because of the supporting infrastructure are good. The comparative methodology are used as the method. It also the best ways to compare the model are found by the early research and compared to the implemented curricula, and measured to knows the best aspect that accepted and implemented to the subject of the research.

EVALUATION OF INDUSTRIAL WORK PRACTICES PROGRAM ACCOUNTING STUDENTS AT VOKATIONAL HIGH SCHOOL 50 JAKARTA
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ABSTRACT
Industrial Work Practice Program (Prakerin) is expected to be a means for students to become professional workers who are ready to find a way out of the problems faced in the future. However, the conditions and facts on the ground today are not as expected. This study aims to evaluate how the context, input, process, and results in the industrial work practice program in the Department of Accounting at Vokational High School 50 Jakarta. Type of this research is evaluation research with CIPP evaluation model (Context, Input, Process, Product). The method used is quantitative methods. Quantitative data was collected through questionnaires distributed to 31 respondents. The results of the study conclude that the program of industrial work practices in the Department of Accounting at Vokational High School 50 Jakarta is in the good category, but still needs improvement and improvement in the input and process components.
EFFORT TO IMPROVE TEACHER PERFORMANCE IN CONTRIBUTING AGAINST THE PROBLEM-SOLVING BAILITY OF JUNIOR HIGH SCHOOL STUDENT IN MATHEMATICS

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ABSTRACT

Problem-solving a high level of cognitive ability that complex, because when solving problems, students need to think critically to able to see a problem and think creatively to able to solve the problem. Therefore, teachers as the spearhead of all education policies required to able to form students to have innovative, creative, and critical thinking skills. For this reason, efforts need to made to improve teacher performance so that they can carry out their functions as one of the determinants of the achievement of quality learning and improvement of student learning outcomes. Based on these assumptions arises the problems raised in this article, namely: how to improve teacher performance in contributing to the problem-solving abilities of junior high school students in Mathematics subjects? Thus, the specific target to achieve an effort to improve teacher performance, especially in developing learning strategies and technology utilization. There two critical strategies that can done to improve teacher performance, namely: training and performance motivation. Training used to deal with the low ability of teachers, while performance motivation used to handle low morale and work passion. The intensity of the use of both strategies depends on the condition of the teacher itself. If it needed, both can used simultaneously.

E-LEARNING READINESS MEASUREMENT IN SMK NEGERI DKI JAKARTA

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ABSTRACT

The purpose of this study was to determine the readiness of e-learning (e-learning readiness) that is effective and make graduates of DKI Jakarta Vocational High School (SMK) have employability skills so that SMK graduates are ready to work. This research will also be used as a reference by researchers to conduct further research. This study uses descriptive statistical analysis. Data collection by leading observations and interviews using a Likert scale. Data processing uses the measurement of e-learning readiness with Aydin & tasci (2005) index model. The results of e-learning readiness research at SMK Negeri DKI Jakarta with a value index of 3.42 which indicates that e-learning readiness at SMK Negeri DKI Jakarta is ready for a little improvement to implement e-learning. There are several indicators of e-learning readiness that fall into the category of not ready but require preparation including signs of motivation, initiative, content, and interaction. Therefore it is necessary to do better preparation for the implementation of e-learning so that e-learning is more effective and students can have employability skills in preparing graduates of SMK Negeri DKI Jakarta who are ready to work and have expertise in technology and information by using e-learning.
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ABSTRACT

The high level of technological advancement in Indonesia, changing patterns of communication in family units that can contribute to the development of the concept of the individual. Based on the theory of ecological, all forms of change someone's behavior to a centralized system of public order, can be seen also based environment. Therefore, it is necessary to analyse the studies done concerning the quality of the physical environment, the pattern of family communication in an era of modernization, and its impact on students’ self-concept. This research was carried out in the Faculty of engineering, State University of Jakarta. Data analysis using a simple correlation to see relationships between variables. Example on research amounts to 75 student college D3 and S1 Cosmetology Vocational Education. The results showed for the variable quality of the physical environment is associated with significant negative self-concepts of physical appearance, and is associated with significant positive self-concept in popularity. For a variable pattern of family communication, associated with significant positive self-concept of physical appearance, and is associated with significant negative self-concepts of behaviour.

DEVELOPMENT ANALYSIS OF ORGANIZATIONAL MANAGEMENT LINK AND MATCH OUTPUT OF THE VOCATIONAL FASHIN DESIGN STUDY PROGRAM – FACULTY OF ENGINEERING, JAKARTA STATE UNIVERSITY
Wesnina, Dewi Sulianthini
Universitas Negeri Jakarta

ABSTRACT

Tracer study is one method used by several universities, especially in Indonesia to obtain feedback obtained from alumni. Feedback obtained from these alumni is needed by universities in their efforts to improve and develop the quality and education system, review the links and matches between education curricula at universities and their use in the work environment. This feedback is very useful to map the business and industry world so that the gap between the competencies acquired by alumni when studying with the demands of the work world can be minimized. The research method used is qualitative method, with the sample of the research are those of the Srata alumni of Fashion Design Vocational Education (PVFD) who graduated from 2010 - 2018, namely 421 graduates. The results of the research search obtained data, 60% of alumni worked as educators teaching in the areas of Jakarta, Bekasi, Bogor, Banten, Tangerang, Tegal, Surabaya, Jogjakarta, Bandung and Semarang, both at the Elementary, Middle School and Vocational and Higher Education Schools. 17% of graduates work in the Fashion Design Industry as designers, fashion analysis, fashion magazines, and garments. While the remaining 23% of alumni have independent entrepreneurs. Based on the search data, it is obtained an illustration that graduates are 100% link and match between the Vocational
Fashion Design education curriculum and the industrial business world. Which is where 70% of the PVFD curriculum is vocational, 20% are entrepreneurs and 10% are industry. Thus, the development of PVFD link and match organizational management can be said to be very high quality.

**DESIGN AND DEVELOPMENT OF STUDENT ADMISSION SYSTEM IN STATE UNIVERSITY OF JAKARTA**

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State University of Jakarta

**ABSTRACT**

Student admission system is a must in every universities, and also in State University of Jakarta. By using the concept of re-used oriented, student admission system that build in 2015 is developing by adding, editing and deleting a requirement based on policy that enforce today. Moreover, adding web service as an intermediary between system and database as an extra feature in new system. Feature Driven Development (FDD) is one of Agile Method that does not have fixed rule in traceability model between requirement and feature. The system is built with React-Redux for its front-end and Laravel as its back-end.

**CAPACITANCE MEASUREMENT SYSTEM USING RC CIRCUITS**

Wisnu Djatmiko
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**ABSTRACT**

This article reports the technique of measuring capacitance using the concept of charging capacitors in the RC-series circuit. The proposed capacitance measuring system is built using 3 sub-systems: (1) Arduino M0 board (with 12-bit internal ADC) to control the process of discharging and charging capacitor voltages using the digitalWrite() function; (2) ERM20004FB-2 LCD module to display measurement data; and (3) R1CX-series circuit (R1 is a carbon-film 89.7Mohm resistor and CX is the capacitor to be measured). The charging time of the capacitor voltage from 0VS to 0.5VS (Δt) is calculated using the analogRead() and micros() functions. The CX value is calculated using the equation $C_X = \frac{\Delta t}{(693.1471 \times R)}$ nF and with the value $\Delta t$ displayed on the LCD module. The capacitance measuring system has been tested to measure capacitance of 14 ceramic-disk capacitors from 1nF to 100nF with an error rate < ± 0.7% (compared to LCR-821).
EFFECT OF NON-LINEAR ELECTRICITY LOADS AGAINST HARMONICS IN ONE PHASE INVERTERS

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ABSTRACT

This study aims to obtain an overview of the effect of non-linear loads on harmonics on a single-phase inverter which can later use as one of the primary considerations on the quality of electricity on the harmonic side for AC load electricity use with power plants sourced from DC generators using inverters. This research conducted at the Jakarta Electrical Engineering Laboratory for 7 months from March to September 2018. The research method uses an experimental method. The schematic of the experiment begins with setting the equipment. Then treated with non-linear load changes as an effect on harmonics. The results of the treatment analyzed so that conclusions can drawn. The results showed that there an effect of changes in voltage harmonics, with the most significant increase in Voltage THD caused by TV load of 1.18%, and the lowest voltage THD caused by refrigerator load 1.03%. However, when compared with IEEE standards 519 - 1992, then all types of non-linear loads that get supplies from the inverter still within the safe limits for electronic devices. While the most significant current THD change caused by TV load of 39.57%, and the lowest current THD caused by refrigerator load of 6.76%. Change in current THD when compared to the IEEE standard 519 - 1992, then the use of non linear load type CFL ≥ lamp; 40 W, LED ≥ 32 w lights, TL light electronic ≥40 W, LED televisions, laptops, desktops, and printers that get supplies from the inverter not within the safe limits for electronic devices.

THE ROLE OF BUSINESS MODELS IN THE DESIGN OF E-COMMERCE MARKETING STRATEGIES

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ABSTRACT

Human resource issues become crucial when organizational expansion increases. At the same time, the organization's business model adapts to environmental changes. One solution related to these two things modifying the business model while maintaining existing human resources or even reducing them. This research will show that the effectiveness of e-commerce business models able to maintain organizational performance even though human resources kept as efficient as possible (even potentially minimized). With research and development methods for business model engineering, this research took the case of MIU Corporation's convection services business. Analysis of research results at MIU Corporation shows that modification of business models with e-commerce elements can improve the effectiveness of organizational performance to 81.48% for the Marketing Team and 44.44% for the Production Team. So it can concluded that modifying business models by incorporating elements of e-commerce information systems more efficient and effective than previous business processes at MIU Corporation.
THE INFLUENCE OF SEAWATER ABRASION ON THE COMPRRESSIVE AND SPLITTING TENSILE STRENGTH
Kusno Sambowo, Achmad Basuki
Teknik Sipil UNJ Jakarta, Teknik Sipil UNS Surakarta

ABSTRACT
This paper presents an experimental and analytical methods conducted to study the influence of seawater abrasion on rice husk ash added high performance concrete towards compressive and splitting tensile strength. Rice husk ash was added into the mix to partially replace the cement content. For the compressive strength test, replacement were done at 0, 13, 15, 16, 17, and 20%. For splitting tensile strength, replacement were done at 0, 5, 10, 15, and 20%. To resemble seawater abrasion, concrete samples were cured in seawater with current. The results showed that the addition of rice husk ash increased the compressive and split tensile strength, as well as to increased the resistance to seawater exposure.

EXPERIMENTAL STUDY OF PERVIOUS CONCRETE WITH VARIOUS AGGREGATES FOR SUSTAINABLE PAVEMENT MATERIAL
Tri Mulyono, Anisah

ABSTRACT
A research is aimed at testing technically important properties of pervious concrete for different aggregate type and size 9.5 mm to 19 mm and water-cement ratio (wcr) from 0.27 to 0.34. The method accomplish is an experiment in the laboratory in accordance with appropriate standards and concerned to research. The following properties of pervious concrete were tested—compressive strength, unit weight at dry conditions, void in mixed, and permeability. The mix proportions were used local material. Cement is used in proportion 350 to 450 kg/m³, and aggregate-cement ratios (A/C) is 4, 25, included 6% sand, 0.2% superplastisizer and 15% fly-ash based on trial-error design. The results show that the difference in wcr in the compressive strength of the concrete only slight. An analysis statistic requirement test shows that, data is normally and uniform. Difference between type of aggregates in pervious concrete is slight. The infiltration rate (permeability) using of pea aggregate (natural aggregate) is more porous compared to limestone aggregates (crushed stone). Aggregates size effect high-to-low in density (unit weight) decreased and void in mixed increased. A good agreement was reached in the case of mixtures with 0.30 wcr and aggregate size that passed 12.5 mm sieve and retaining at 9.5 mm to provided compressive strength.

UNITED STATES OF UNITED STATES GPS FOR DETERMINING POSITION
Marhaenda Arvai K.S

ABSTRACT
The global positioning system a radio navigation system and positioning system using United States GPS satellites. This system determines the position (Æ, l, h) or (x, y, z), and provides information about three-dimensional speed accurately and continuously over time.
AERODINAMIC DRAG REDUCTION OF VEHICLE SI PITUNG G4 UNJ FOR SHELL ECOMARATHON ASIA 2015
Sirojuddin, Raden Engineu, Wardoyo
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ABSTRACT
The purpose of this research is to improve design of vehicles si pitung G4 UNJ for shell marathon asia competition, to get lower aerodynamic drag coefficient so that the fuel consumption can be reduced. The improvement focused on front wheel sparkboard vehicle body. For design drawing used Autodesk Inventor software, while the aerodynamic simulation test using CFD Autodesk Flow Design Software and Solid Works Flow Software student version. Based on the simulation with velocity 30km/h, test result shows for Si Pitung G4 drag coefficient $C_d = 0.15$ and Si Pitung G5 = 0.13. It has been found that aerodynamic drag reduction coefficient Si Pitung G5 compare to Si Pitung G4 equal to 17.77 %.

TEMPERATURE INFLUENCE E7 018 ELECTRODE DRYING AGAINST MECHANICAL PROPERTIES OF SMAW PROCESS RESULTS ON A36 STEEL
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ABSTRACT
Drying of electrodes on the mechanical properties of ASTM A36 steel concerns tensile strength, toughness, and hardness value. This research using the experimental method. The test consists of a test without damage and a destructive test, a test without damage using radiography while the damaged test uses macro etching photos, hardness test. The number of sample making as many as 12 samples divided into four variations in the temperature of drying electrodes. Using low carbon steel, ASTM A36. The results showed that the drying of the E 7018 electrode without being opened had many welding defects on the inside in the form of Porosity Ø 2mm. The highest hardness test results on a metal base found on ASTM A36 steel plate SMAW joints which carried out by electrode drying process with a drying temperature of 230ºC, with a hardness value of 158 VHN. Violence test on The highest weld metal found in the ASTM A36 steel plate SMAW joints which electrode drying process with drying temperatures of 260ºC, with a hardness value of 162.6 VHN.
PROTOTYPE SMART TRASH CAN FOR IMPLEMENTATION SMART ENVIRONMENT IN THE SMART CITY BASED ON ARDUINO AND ANDROID

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3 Informatics Education Studies Program, Electrical Engineering, Faculty of Engineering, State University of Jakarta, Rawamangun, Indonesia

ABSTRACT

The government provides different trash cans so that people can dispose of garbage according to the type of garbage and waste will be easily recycled, and this is done in order to be a smart city. However, there are some people who do not understand in which vats they have to dispose of so that in the end they immediately throw garbage in any barrel without seeing the type of garbage in each trash can. This study aims to create a trash can that can determine the type of waste that is discarded and automatically dispose of it in the right barrel. The research method used is device design, device making, data retrieval, and data analysis. So that the results of this study are that it can be made a smart trash can prototype to be implemented in smart city based on arduino and android. Which later can also be a device for education about the type of garbage in children from an early age.

VISION BASED SURVEILLANCE SYSTEM FOR SECURITY ROOM

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ABSTRACT

Home security remains a crucial issues not only in metropolitan city but also in county, especially for people who spend many activity outside home. So that a surveillance system to improve and make sure security system and monitoring house environment remotely is needed. However, the majority of the system is not equipped with an actuator that can take a real time action to prevent crime. This study aimed to develop a surveillance system to monitor home situation and also detect the movement of significant objects, then drives a servo motor to pointed spotlights to the object automatically. This system was built using an 8 Mega pixel Raspberry pi camera as a vision sensor, servo motor integrated with spotlights as actuators, and Raspberry pi 3 module as the main controller. The results of this study found that the system can detect object motion and pointed the spotlight to the object based on the object's position on the two-dimensional image produced by the camera.
DESIGN AND DEVELOPMENT OF WEB SERVICE APPLICATION FOR MULTIBANK STUDENT PAYMENT SYSTEM IN STATE UNIVERSITY OF JAKARTA

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ABSTRACT

Payment System for student tuition fee in Jakarta State University is a web-based software that is functioned to support student payment activities both for prospective student payments and for registered student payments. Provision for this process includes updating the payment status that is integrated with the bank, as well as payment history from time to time. During this time to serve the payment process of 24,000 students, UNJ established a partnership to pay student tuition fees with four banks, namely BNI, Mandiri, Bukopin, and the latest with BTN. The four banks have different student payment segments, namely for Diploma, Under Graduate, and Post Graduate programmes. The reason why the four banks were selected and the segmentation of their assignments was the strategic decision of the UNJ leadership. In this bank payment, we must create a special application known as the Host-to-Host application that connects banks with university databases, each of every bank. The problems appears when the data and formats used in each bank are different, this makes enormous problems when the final record process. With this web service application, enable the multibank student payment management process that has the same data standards and formats that are integrated with banks, neat recording, and integration with academic information systems and UKT systems.

DESIGNING POWER WAVE AUTOMASS (AUTOMATIC MARITIME SECURITY SYSTEM) AS EFFORT TO PREVENT ILEGAL FISHING

Massus Subekti, Muhammad Rif'An, Daryanto Daryanto
Faculty of Engineering, University of Jakarta

ABSTRACT

This research aims to provide solution on ilegal fishing problem in Indonesia. The solution that offered is creating Power Wave Automass as automatic maritime security system. Power Wave Automass is an equipment which powered by converting ocean wave energy into renewable electricity energy. Expected outcomes of this research is creating capable converting process for the equipment in order to utilize vertical ocean wave energy into electrical energy as an alternative and renewable energy resources in Indonesia. The research method used in this study is a design analysis including Study Literature, Wave data retrieval and BMKG satellite image data, system design, determination of design size, simulation and analysis of the reliability of system design.
COLOR BLINDNESS TEST BY ISHIHARA METHOD BASED ON MICROCONTROLLER SYSTEM  
Dudy Suparyadi¹, Muhammad Yusro², Pitoyo Yuliatmojo³  

ABSTRACT  
Ishihara is the most commonly used conventional test for color blindness testing. Ishihara test is a collection of stacked pictorial cards and colored spots, often used to diagnose red-green deficiency. The purpose of this research is to make Ishihara method of color blindness test based on microcontroller system to get more accurate test results. This color blindness test system works by using a microcontroller (Arduino) as a processing device that processes input data from the user's touchscreen (instead of manual images) and saves the test results into a database server. The results show that this color blindness test works very well because it can distinguish between normal vision and color blindness. This tool produces test information that is more accurate than conventional tests. This tool is also able to store test results in the database server and can be accessed by users via smartphones android and personal computers.

PROTOTYPE OF TEMPERATURE AND DUST MONITORING IN ROOM BASED ON MICROCONTROLLER SYSTEM  
Agung Pangestu¹, Muhammad Yusro², Wisnu Djatmiko³  

ABSTRACT  
The results show the prototype of dust monitor and temperature in the room can monitor dust and temperature in normal air condition and dusty /unsafe air. When the dust level is more than 0.15 mg /m³ then the led indicator 1 and the active sprayer inform and neutralize the dust levels in the air. When the temperature intensity is greater than 35 °C then the led indicator 2 and the active sprayer inform and neutralize the temperature intensity in the room. When both threshold values are met, then the led indicator 1, led 2, buzzer, the sprayer will actively jointly notify and neutralize air and temperature in the room.

NETWORK THROUGHPUT IMPROVEMENT ON CAMPUS NETWORK WITH OSPF METRIC ROUTING PROTOCOL MODIFICATION  
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ABSTRACT  
OSPF (Open Shortest Path First) is routing protocol that are widely used in computer networks. Selection of routing protocols is very important in improving network performance. Calculation of OSPF metrics will determine the performance of data packet delivery. It based on Shortest Path Tree. To find the best route from source to destination, it must determine the shortest path between itself and each router in the network. The router creates this perspective by taking the information in the LSDB and transforming it into a shortest path first tree or SPF tree. It is an algorithmic calculation to construct logical network view performed by the computer within
the router. To speed the construction of network tree, PDU size variable is proposed to increase the speed of data packet communication among routers. This research was using Cisco Packet Tracer 5.3 software, simulations were made on a campus network whose PDU variables were modified to obtain the optimum network tree with OSPF routing protocol. The weighted testing parameters in this study is time delay values. Hopefully, the value of redistribution delay is 1% better depending on traffic density. Main route retrieval and alternative package delivery are based on the smallest cost and metric values in the OSPF protocol.

A PROPOSED MODEL OF METAMATERIAL COMPLEMENTARY SPLIT-RING RESONATOR TO REDUCE MICROSTRIP ARRAY ANTENNA DIMENSION
Efri Sandi, Rizqiana Putri, Aodah Diamah
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ABSTRACT
This study aims to develop a model of complementary split-ring resonator (CSSR) metamaterial structure to reduce microstrip array antenna dimensions. Smaller antenna dimensions are needed in communication system applications such as cellular devices and IoT sensors. This study was developed by designing the CSSR model on the microstrip array antenna on 2300 MHz LTE frequency band and using FR-4 substrate material. The simulation and measurement results show the microstrip array antenna with the addition of CSSR structure has 31% smaller dimension compared to without using CSSR structure. The radiation performances with the addition of CSSR structure also shows improved bandwidth and return loss with a slightly decrease in gain.

EFFECT OF PERTALITE METHANOL BLEND ON PERFORMANCE AND EXHAUST EMISSION OF A FOUR STROKE 125 CC MOTORCYCLE ENGINE
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ABSTRACT
The paper showed the effect of using pertalite - methanol blend fuel on performance and exhaust emission of a four stroke 125 cc single cylinder engine. Two different blends of fuels, 100% pertalite – 0% methanol (M0) and 70% pertalite – 30% methanol (M30), were experimentally tested. The experiments were conducted with different engine speeds ranging from 5000 to 8500 rpm. Power, torque, brake specific fuel consumption (BSCF) and exhaust emissions were measured during the test. It was concluded that M30 blend generated the largest power, 5.28 kW, at 7500 RPM. The M30 fuel also produced the highest torque, 7.1Nm, at 5500 RPM. For the specific fuel consumption, the best value of M30 fuel was 0.39 kg/kW.h, at 7500 RPM, while the M0 fuel has the best value at 7500 RPM that was 0.21 kg / kW.h. The M30 blend fuel decreased the emissions of carbon monoxide (CO), carbon dioxide (CO2) and hydrocarbon (HC).
**EXPERIMENTAL STUDY OF SAVONIUS WIND TURBINE PERFORMANCE WITH VARIATION OF BLADE SHAPE, TURBINE STAGE, AND GAP BETWEEN BLADES**

Catur Setyawan Kusumohadi, Arif Nur Arifin, Firman Julismar

**ABSTRACT**

The purpose of the research was to determine the effect of blade’s shape variations, number of turbine’s stage, and gap between blades on the savonius turbine. Wind turbine performance parameter that were observed includes, turbine speeds, current and voltage of the installed electric motor, TSR (tip Speed Ratio) and Cp (Pressure Coefficient). The experimental was conducted to get more realistic results that based on the low wind at Jakarta region. The Wind was produced by using a fan that its output wind speed was varied at 2 m/s, 3 m/s 4 m/s and 5 m/s. Two blade shapes were chosen, they are U and L shaped blades. The Turbine s had either single stage or two stages. while the observed gaps were with distance of 5 cm or without gap (0 cm). The results show that the power of wind turbines with U shaped blade and single stage produces power 0.02744 watts, while U shaped blade with overlap 5 cm produces a power of 0.017088 W.

**THE EFFECT OF TRANSFORMATIONAL LEADERSHIP AND ORGANIZATION COMMITMENT TO ORGANIZATIONAL CITIZENSHIP BEHAVIOR (OCB) IN BUILDING CONSTRUCTION COMPANIES**

Adhi Purnomo, Winoto Hadi

**ABSTRACT**

The purpose of this study was to analyze the influence of transformational leadership and the commitment of workers' organizations to Organizational Citizenship Behavior (OCB) on construction service companies in Jakarta. This study uses primary data obtained from questionnaires through proportional random sampling techniques to building construction workers in 4 (four) construction companies. The results of questionnaires were obtained from 30 (thirty) respondents from 4 (four) job positions, namely: Project Manager, Site manager, Supervisor and Staff. Data analysis in this study used multiple linear regression to see the influence of leadership and organizational commitment of Organizational Citizenship Behavior. The results showed that there was an influence of transformational leadership on workers' organizational commitment and organizational citizenship behavior. There is a significant influence between organizational citizenship behavior and workers' organizational commitment.
IMPLEMENTING FUN COOKING MEDIA IN HEALTHY FOOD: A COMPUTER-BASED USE
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² Computer Informatics Education Study Program, Faculty of Engineering, State University of Jakarta

ABSTRACT

This paper analyzes an implementation of fun cooking in healthy food toward a computer-based use to increase the knowledge of students aged 5-6 years. Respondents were students of group B in Ikal 1 Kindergarten at East Jakarta, Kreativa Kindergarten at Bogor City, Generasi Bangsa Early Childhood Education Program, and An-Nasihin Kindergarten. Data analysis techniques used qualitative analysis for quantitative data and qualitative analysis or inference (Z-test) for quantitative data in order to analyze the results of a trial model using an experimental design. This research design used a two-group pretest-posttest. Paired Sample Test test results obtained a p-value of 0.000 smaller than 0.05. H0 is rejected, and H1 is accepted. It means that there is significant influence between knowledge of students aged 5-6 years before and after implementing fun cooking media in healthy food toward a computer-based use. It has an average value of 96% which expected higher media effectiveness. Zcount obtained -2.89 but Ztable with α = 0.05 obtained -1.96. In -Z counts < -Ztable, H0 is rejected, and H1 is accepted. It means that there is a significant difference in the use of old media toward images and new media toward computer-based. In conclusion, the implementation of fun cooking in healthy food toward a computer-based use better than image.

A NEED ASSESSMENT ON COMPETENCY CERTIFICATION OF CONSTRUCTION WORKERS IN INDONESIA
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ABSTRACT

Competency certification for construction workers is a hot issue discussed in Indonesia today. This raises various responses regarding the real needs of the competency certification of the construction workers. The survey method using descriptive analysis was used to explore 191 participants who were consumers of construction workers. The instruments used were questionnaires accompanied by focus group discussions (FGD) and in-depth interviews. The results show that the level of need for the competence of construction workers is high. However, consumers need more workers who have many competencies. Regarding competency certification, socialization, quality, process, and results must be improved through credible institutions and mastering the field of training, measurement, and evaluation. In addition, the pattern of socialization and training to get there must involve experts in the field of education, measurement, and evaluation of training.
DEVELOPMENT OF AUTOMOTIVE VOCATIONAL HOMESCHOOLING EDUCATION BASED ON TECHNOPRENEURSHIP IN JAKARTA INDONESIA
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ABSTRACT
Homeschooling one of the informal education pathways that gives parents the freedom to provide appropriate learning patterns for their children in developing their talents and creativity. The pattern of homeschooling learning time independently regulated not tied to the time to study in a regular school. The curriculum on homeschooling only limited to the level of elementary school (Paket A), junior high school (Paket B) and high school (Paket C) levels. Whereas for the fulfillment of vocational based education needs at the vocational level there no model yet. At present the students' need for vocational learning with time flexibility a driving force for the growth of alternative schools with vocational choices. Parents who want closeness with children in the midst of busyness want their children to master specific field skills so that one day they can become entrepreneurs, work or continue to University. It is just that it cannot obtained if you only study in general homeschooling. There needs to vocational homeschooling with skill groups such as automotive. Automotive vocational homeschooling designed equivalent to Paket C so that graduates can continue to college. To produce graduates who have the choice of entrepreneurship, work, or continue their studies at the University, technopreneurship-based automotive vocational homeschooling education becomes a choice for students. The profile of graduates developed in automotive vocational homeschooling is entrepreneurship or implementing a car repair shop (service & repair). Expertise is taken depending on the willingness and ability of students in following the learning process. Learning outcomes that have been developed include: the ability to apply technopreneurship, basic automotive capabilities, car engine maintenance capabilities, chassis capability, capability of transfer power, and car electrical capability.

ACCEPTANCE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR VOCATIONAL HIGH SCHOOL MANAGEMENT
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²Balitbang Kemendikbud, Jakarta

ABSTRACT
The adoption success of Information and Communication Technology (ICT) for school management is basically influenced by organizational and technological factors. Organizational factors are management's ability to utilize ICTs to support school management. Technological factors relate to the technology itself and the user behavior in technology utilizing to support its performance. This study aims to determine the influence of school culture on ICT acceptance in vocational high schools. The study method is a causal survey with a total of 245 respondents. Data analysis apply path analysis using Partial Least Square (PLS) approach. The results showed that school culture had a direct effect on the perception of usefulness and ease in using ICT with path coefficients of 0.359 and 0.173, respectively; perceptions of usefulness and ease
of use of ICTs have a direct effect on the attitude to use ICT with path coefficients of 0.322 and 0.489, respectively; the attitude to using ICT directly affects the actual use of ICT with a path coefficient of 0.525; The study conclusion is that school culture has a positive and significant effect on ICT acceptance.

REVEALING FACTORS HINDERING ON COMPETENCY CERTIFICATION FOR SKILLED LABOUR IN THE CONSTRUCTION SECTOR
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ABSTRACT
The purpose of competency certification can be seen from two complementary aspects, namely to assess a person's ability and expertise in his profession and come out to give confidence to the user that the competence of labour fulfills the requirements in carrying out the task. However, the number of construction labour certified is only about 3% of all construction labour in Indonesia. This study aims to reveal hindering factors of competency certification in the perspective of construction labour, especially skilled labour. This study uses a quantitative model with descriptive analysis. This research was conducted on skilled labour in three high-level building projects. The research design used in the form of surveys with data collection methods through questionnaires, observation, and literature study. The results of this study indicate that the factors that hinder skilled labour in obtaining competency certification are 1) Complexity of the implementation of competency certification, 2) The high cost of competency certification, 3) There is no difference in certified labour wages, 4) The certificate does not guarantee quality work.

INTERNET OF THINGS (IOT): BLYNK FRAMEWORK FOR SMART HOME
Ermi Media’s, Syufrijal Syufrijal, Muhammad Rif’An

ABSTRACT
This paper discusses the design for controlling and monitoring devices at home via a smartphone. Raspberry pi is used as a server and as a bridge connected to the internet. NodeMcu microcontroller is used as a link between equipment and sensors at home with Raspberry pi. NodeMcu reads sensor data and sends it to the server. The server responds to a smartphone request that the Blynk framework has installed. This system is designed to have automatic mode when the homeowner is offline, and also has the entire system log data.
PORTION IMPROVEMENT OF VEHICLE ENTRY UNITS THROUGH THE IMPROVEMENT OF EXPRESS PERIODIC MAINTENANCE SERVICE METHODE IN CARS WORKSHOP

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ABSTRACT

This study aims to improve the specific periodic maintenance service method so that it can increase the unit entry portion per one working day in a workgroup in the car repair shop. The measurement using the standard time working group map used in the specific periodic maintenance service method before repairing was 44 minutes and 55 seconds with a total delay of 21 minutes and 10 seconds so that the unit entry portion was 9 units per one working day. The specific periodic maintenance service method that has undergone improvements results in an equal time between completing the work process at each vehicle position between technicians A and B and no delay time. So that the portion of the vehicle's entry unit from before being repaired 9 units to 12 units after the repair done because the time needed to complete a periodic vehicle service work with the specific periodic maintenance service method becomes more efficient, namely 34 minutes. In other words, there an increase in entry units of 3 units or 33% per one working day for each working group.

DESIGN AND IMPLEMENTATION OF LOW-COST WIDEBAND ANTENNA FOR GROUND PENETRATING RADAR

Baso Maruddani, Efri Sandi, Muhammad Fadhil

ABSTRACT

Vivaldi antenna is one of many types of antenna that implemented on ground penetrating radar. Its characteristics are pointed radiation dan wide bandwidth. This study aims to design an antenna used for non-destructive test on a transportation to check the roadway material. This Vivaldi antenna has a wide bandwidth 1 GHz approximately with the frequency range between 1 GHz to 2 GHz. This Vivaldi antenna design is obtained by changing few parameters of common Vivaldi antenna to fulfill its design characteristics: low cost and wide bandwidth. The antenna size will be 350mm x 300mm. The simulation result shows that there is return loss below -10 dB for 1-2 GHz frequency range and the lowest return loss at that frequency range is around -35 dB on 1.4 GHz frequency. This paper also explains about the effect of tapered slot size changes to return loss value and frequency. When the antenna’s width is enlarged, the value of return loss is getting smaller in the lower frequency. Therefore, antenna’s bandwidth is getting wider. The same situation happened when tapered slot size gets bigger value, the antenna’s working frequency switch into the lower frequency. We can conclude that antenna’s bandwidth widening can be done by enlarging tapered length value and reducing tapered rate value.
BUILDING MOBILE APPLICATION OF 3D VIRTUAL TOUR FOR JAGO TEMPLE AS HISTORICAL SITE IN MALANG
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Game Technology, Department of Creative Multimedia Technology
Politeknik Elektronika Negeri Surabaya

ABSTRACT

Indonesian people do not have a high interest in historical tourism site along with changes in people's lifestyles. They are more interested in natural attractions, rides and shopping centers than historical sites. It has decreased the number of visitors to historic sites, for example, the number of visitors to the Jago Temple historical site in Malang in April 2013 decreased by 30%. Therefore, it requires a device so that the historical site can be recognized again by the community. We propose an interactive promotional tool by utilizing technological advancements in the form of a virtual tour 3D application. This 3D virtual tour application for Jago Temple is android based and built using Blender software, Unity 3D and C# programming languages. This virtual 3D virtual application tour Android-based Jago Temple historical site provides information about Jago Temple and displays historical views of Jago Temple attractions in 3D virtual form. The user seems to be able to explore the environment of the Jago Temple historical site in real life. The response of users to the application shows that this application can visualize the environment in Jago Temple, the application design is attractive, and the information presented is quite complete regarding Jago Temple.

MICROSTRUCTURE AND MECHANICAL PROPERTIES ANALYSIS OF QUENCHED AND TEMPERED AISI 4340 STEEL
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ABSTRACT

This research was conducted to determine the optimum parameters in quenching and tempering process of AISI 4340 steel. Quenching and tempering processes were carried out to modify the microstructure and mechanical properties, especially to achieve the high strength and toughness resilience for steel armor application. Steel is widely use as armor material due to its ease processing, lower production costs, high strength, good toughness, and heat treatment capabilities. This material also has a quite price and good availability. Metallurgical structure to be a crucial factor, especially for ballistic-resistant vehicle applications. The samples of AISI 4340 commercial steel with dimension of 55x10x10 mm³ were austenitized at temperature of 800 °C for 1 and 2 h in a muffle furnace and followed by quenching process with media of oil. Furthermore, the quenched samples were then tempered at 300 ° C for 2, 3 and 4 h at the muffle furnace as well. Microstructure analysis was conducted by using optical microscopes. The result showed that quenching process promoted the phase transformation from the combination of ferrite and pearlite to be the ferrite and martensite with the shaped like a needle. On the other hand, the tempering process promote the transformation of martensite to bainite. Quenching have also led to increasing of hardness.
ANALYSIS COMPRRESSIVE ATRENGTH OF SOLID WASTE RECYCLING BATTERY AS A PARTIALLY REPLACING SAND IN CONCRETE

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ABSTRACT

The formulation of the problem is whether recycled solid waste is used as a building material to replace some of the sand in making concrete. This study aims to determine the optimum compressive strength of normal concrete by using recycled solid waste as a substitute for some sand. This study uses a cylindrical shaped test object with a diameter of 10 cm and a height of 20 cm. Solid waste batteries are used with variations of 0%, 10%, 12.5% and 15% for each specimen. Fc ’20 MPa, W / C 0.55, and 12 + 2 cm slump compressive strength, with 48 samples (3 specimens for each variation for 7, 14, 28, 28 and 56 days). The results of the study are expected to be able to reduce waste due to recycling of used batteries, reduce the elasticity of natural aggregates for concrete construction, get a large concrete compressive strength, get the optimum percentage of the use of this waste in concrete.

APPLICATION OF RISK MANAGEMENT IN OVERSEEING INDONESIA’S MARINE TOOL (TOL LAUT) PROGRAM

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ABSTRACT

We are witnessing an increasing trend towards the private sector participation in the public service sectors such as highway, railway, airport, telecommunication, seaport, water and power sectors in the developed as well as developing countries. However this new trend has especially been increased remarkably in the port sector aimed at introducing private sector in port operation and management previously under the control of central, state or public entity. The National Development Planning Board (Bappenas) is behind the “marine highway” plan that intends to develop new routes connecting the country’s east and west with scheduled maritime traffic that is all charged with a fixed rate. From the results of the research, it was found that the use of the concept of risk management in the sea toll (Tol Laut) program could be applied by looking at several important factors including the availability of data that is clingy and the most important is the support of the government to want to provide supporting facilities in implementing it, this will be closely related to future port investment.
ANALYSIS OF STANDARIZATION SIZE OF WOMEN’S MUSLIM CLOTHING IN INDONESIAN

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ABSTRACT

As a country that will become the center of world Muslim fashion, one of the things that must be prepared is the standard size of clothing. The standard size for ready to wear clothing is used to represent the body shape / size in general. The standard size of clothing usually refers to international standard sizes, S (Small), M (Medium), L (Large), XL (Extra Large) and XXL (Extra Extra Large) or use of numbers that represent the size. Clothing sizes are used in three different contexts, the size of the body (custom made), the size of the garment and the size of the label. The results of the analysis show that Muslim women's clothing products in some markets use garment sizes. Muslim women's clothing size is influenced by the form of clothing (design), price and type of material used. Some Indonesian designers refer to body measurements with modifications according to design. Muslim women's clothing with modest wear dominates the market, especially in Jakarta. Syar'i or modest wear generally uses the size of the body circumference and the length of the dress as a reference in determining the standard size. Difference in size according to shape is obtained 1-2 cm between each standards, based on price, difference in size reaches 2-4cm, and differences based on material between 1-2cm.

DEVELOPING OF WEB BASED INFORMATION SYSTEM FOR UNIVERSITAS NEGERI JAKARTA

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ABSTRACT

This study aims to produce a web-based Universitas Negeri Jakarta alumni data information system that can be accessed anywhere. The research was conducted using the waterfall method where this research went through several stages, namely needs analysis, system planning, system design and system design. In this study two testing phases were carried out, namely feasibility testing and usability testing where this test was carried out after the web was completed and tested using a questionnaire as a research instrument. The research questionnaire distributed consisted of 18 questions grouped into 5 usability variables. Based on data processing, the results obtained from the 5 usability variables used in the questionnaire, it can be seen that for each aspect of usability the percentage values are above 80% (Learnability, Efficiency, Memorability, Errors, and Satisfaction).
WEB-BASED EMPLOYEE ATTENDANCE SYSTEM USING FINGERPRINT SCANNER
Bachren Zaini

ABSTRACT

Employee attendance system using fingerprint scanner (fingerprint) is a strategic approach to improve employee performance, so it requires a web-based employee attendance system using fingerprint scanner that is effective as expected. Web-based employee attendance system application using fingerprint scanner is a programming application that is able to support in assessing employee performance. It is expected that this application can help to solve problems that faced by human resources and administration department. The design of employee attendance system using fingerprint scanner will help input from employee who has been registered in the database, its output is to display employee attendance reports to be used as a in evaluating employee performance, and can also be used as decision support data.

RISK ANALYSIS OF WORKPLACE ACCIDENT USING HAZARD IDENTIFICATION AND RISK ASSESSMENT (HIRA) (CASE STUDY ON THE MACHINING PRACTICE WORKSHOP OF SMK DINAMIKA PEMBANGUNAN JAKARTA)
Ja'Far Amiruddin

ABSTRACT

This study aims to analyze the risk of workplace accidents in the machining practice workshop of SMK Dinamika Pembangunan Jakarta using the Hazard Identification and Risk Assessment (HIRA) method. That is a series of processes to identify hazards that can occur in activities, then conduct a risk assessment of these hazards and then create a hazard control program to minimize the risk level to a lower level in order to prevent accidents. Activities / processes using tools / machines in the machining practice workshop of SMK Dinamika Pembangunan Jakarta are turning practice, vertical milling practices, horizontal milling practices, drilling practices, grinding practices, scraping practices, and bench work practices. Low to medium priority risks do have low severity, but the frequency value of the event is high, meaning that the potential danger can be tolerated but the frequency of occurrence is quite frequent. These risks are as follows: scratched hands, blistered hands. There are several potential hazards with high severity which makes it a major risk priority, but the probability of occurrence is small. Examples of cases in this case include: hair wrapped around the machine, clothes wrapped around the machine. Existing risks can be reduced by giving students more understanding about the importance of occupational safety and health (K3) and applying the OSH management system in the machining practice workshop.
STUDY OF URBAN DRAINAGE NETWORK PERFORMANCE IN MAXIMUM DISCHARGE STORAGE IN THE CITY OF BANDUNG
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ABSTRACT
The analysis of Urban Drainage Network Performance in Maximum Discharge Storage in the City becomes an urgent matter, the approach that will be conducted in this research is explanatory, which is explaining natural phenomena that happened and synthesizing the relation of parameter stream, existing drainage network, and potential puddle. The result of analysis shows several inundation area in the rainy season in sub-Catchment Citepus, the cause is identified as there has not been a drainage channel that connects it to the main canal that caused the drainage network hard to be evaluated, the water rope are clogged beside the road, dimensional channel cannot handle runoff debit, various clog on several crossway, the narrowing and swallowing of channel because of sedimentation, and several different utility with the transversal and parallel in position causing it to become a place where garbage stacks up. Several channel section's capacity are unable to contain debit, but several channel are still able to contain but in factuality of the field there are still rash that caused inundation in several main section roadway in Bandung.

CONDIFICATION OF SOTO NUSANTARA SEASONING TO PRESERVE NATIONAL CULINARY
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ABSTRACT
This study aims to find out basic and special seasoning of Soto which used in various Soto dishes in the archipelago. The study is a literature review of 45 Soto recipes that triangulated in the Jabodetabek area through visiting seller who sells Soto from various regions in food stalls or restaurants. In-depth interviews conducted with chefs and informants. The results obtained that 83.7% for very accurate, 4.6% for accurate, and 11.6% for less accurate between recipes formulas and real conditions. Soto Nusantara seasoning consisted of basic white and special seasoning. The basic white seasoning used 76.7% formula consisting of shallots (Allium cepa), garlic (Allium sativum), candlenut (Aleurites moluccana), 2.1% formula without shallots, and 21.8% formula without candlenut. The special Soto Nusantara seasoning consisted of lemongrass (Cymbopogon citratus), salam leaf (Syzygium polyanthum), galangal (Alpinia galanga), ginger (Zingiber officinale), lime leaf (Citrus hystrix DC), coriander (Coriandrum sativum), and pepper (Piper nigrum). It revealed that 17.7% for complete formula, 20% for less 1 formula, 22.2% for less 2 formulas, 22.2% for less 3 formulas, 11.3% for less 4 formulas, 6.6% for less 5 formulas. In conclusion, the structure of Soto Nusantara seasoning consisted of basic white and special seasoning. Based on a high level of suitability between a recipe book and results of triangulation, a quality recipe book can use as a reference in making the basic and special seasoning of Soto Nusantara.
TOURISM DEVELOPING BASED ON LOCAL CULTURE SEGARAN VILLAGE
KARAWANG, WEST JAVA
Rasha Rasha, Nurlaila Mashabi
Vocational Education of Welfare Family

ABSTRACT

Indonesia rich in regional cultural arts, a legacy of past history that is potential enough to developed into tourism area. Tourism can be relied on to improve the welfare and national development. Segaran village have so many temple, the two biggest are The Jiwa Temple and The Blandongan Temple. Both of these have tourism potential, which is the natural beauty around it that is still natural and the history behind it. However, the temples that supposed to bring in both local and foreign tourist like other heritage sites in Indonesia, should be able to improve the economy in the region itself. While Segaran Village is still far from that, in Segaran Village it is still need development, especially at supporting facilities such as homestay, restaurants and souvenir’s shops. Based on this, the researcher intends to mapping the tourist attraction typology in order to develop tourism potential in Segaran Village. It is a qualitative research, which is to find out what things can be developed, how the develop had worked, and what are the obstacles in the development process. Based on the result, was found that in Segaran Village, especially Jiwa Temple and Blandongan Temple didn’t have enough supporting facilitiea for visitors, so that many visitors who just came to see it, did not enjoy the tourist attractions. Supporting facilities that need to be developed include homestays, children's playgrounds, restaurants, and souvenirs. Segaran Village position currently still ate the first of development. So that the current potential if it is not followed up with good development strategies will decreasing the potential.

THE COMPETITIVE ADVANTAGE OF SMALL INDUSTRY BATIK
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ABSTRACT

The increasing number of production values due to an increase of batik exports to various countries as well as the national exports of batik would certainly help in generating foreign exchange. Batik industry is a culture- and tradition-based industry in which its raw materials is available in the country. In addition, it also has cultural value and helped absorb quite a lot of labor with owned some special skills. The aim of this study was to determine how the organizational culture variables intervened in the relationship between the human capital variable with competitive advantage variable, so that batik small industry entrepreneur would be able to formulate and choose the right strategy to win the competition by managing its human capital well. This study used primary data in the form of questionnaires distributed to 200 respondents. The data obtained from the questionnaire were analyzed using Classic Assumption Test, Multiple Linear Regression and hypothesis testing (f-test and t-test) with significance level of α= 5% by using SPSS version 21. The results of the study showed that based on the results of regression testing on human capital variable with the competitive advantage variable.
and the presence of organizational culture as intervening variable, it could be concluded that there was a significant relationship between the human capital and intervening variables (organizational culture) as well as with competitive advantage variable. This result showed that organizational culture variable was an intervening variable between human capital and competitive advantage variable in Batik Trusmi industry, Indonesia.

THE INFLUENCE OF PUMPKINS MASKER USAGE TO THE MOISTURE OF SKIN FACE
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ABSTRACT
Pumpkin fruit flesh has the ability to moisturize the skin. This study aims to determine whether there is an influence from the use of pumpkin mask on the moisture results of facial skin. This study was carried out by adult women aged 35-45 years who have dry facial skin. This research was carried out with treatment 8 times in 2 times a week for 4 weeks. The method used in this study is experimental and the value in the treatment process using the skin analyzer test tool. After obtaining the results of the research data, the data analysis requirements were tested by normality test and homogeneity test using an average t-test of one party. Data analysis shows that t count = 3.073 at the significance level a = 0.05 and dk = 8 then t table = 2.31 which means that t count > t table then the null hypothesis (H0) is rejected. Thus there is the effect of using a pumpkin mask as a face mask against the moisture of dry facial skin.

TOPICAL HERBAL THERAPY WITH SOLANUM TUBEROSUM L TO COMBAT ACNE
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ABSTRACT
Acne is an infectious disease that usually occurs during puberty. To treat acne can be done with topical, systemic, hormonal and herbal therapy. Potatoes can be used externally and are useful as anti-acne agents. Data analysis techniques in this study using the null hypothesis testing which previously carried out normality tests and homogeneity tests as requirements for data analysis. Test the similarity of the two variants using the t-test with a significance level of 0.05 and the degree of freedom (df) = 8. The results showed that the acne reduction score (Acne vulgaris) on facial skin using a potato mask with 5 sample subjects ranged between the first treatment of 18.50 after treatment to 22.25. The results showed that the acne reduction score (Acne vulgaris) on facial skin using a control mask with 5 sample subjects ranged between the first treatment of 16.00 after treatment to 15.25. The study showed that the sample data from using potato mask and using control mask is usually distributed. The study also showed that the data was homogeneous. From the results of the t-test shows that there is an effect of using a potato mask compared to a control mask.
THE INFLUENCE OF COMBINATION OF CASTOR OIL WITH AQUEDES TO INCREASED MOISTURE DRY SKIN
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ABSTRACT
The purpose of this research to determine whether there is any use of combination of castor oil with aquades to increased dry skin moisture. Part of dry skin that be chosen for the research is the heel of foot. The taking of sample be done by method of purposive sampling. Base on the result of experiment to 10 samples that have been classified: 5 samples use combination of castor oil with aquades 5% and 5 samples use the combination of castor oil with aquades 10%. Data of experiment point out the average value of the increasing of dry heel of skin moisture level that use the combination of castor oil with aquades 5% (=2,32) more bigger, be compared by using the combination of castor oil with aquades 10% (=1,24). The result of data analysis base on t calculate is about 12 which is if be compared by the price of ttable on the level of belief α = 0,05 and dk =8 is about 1,86 will become t calculate>ttable. So the results of the study showed that there was a score of increasing moisture content of dry heel skin by using a mixture of castor oil with aquades. It is known that castor oil contains high fat of linoleic acid and aquades which has neutral properties so that the mixture of castor oil with aquades still contains high oil content, so the more the mixture of seed oil, the higher the level, moisturizes dry skin.

THE IMPORTANCE OF ICT FOR OFFICE ADMINISTRATION IN MILLENNIAL ERA
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ABSTRACT
This study aims to describe how important of information and communication technology for office administration. Researcher uses a descriptive data with public opinion survey. State of the Art The accumulation of work that occurs is caused by several factors, namely (1) The absence of a system that makes it easy for the secretary to do his work (2) The lack of a reminder because of the many work tasks of a secretary (3) lack of motivation in carrying out a secretary's job. Secretary is a professional position whose work requires expertise and skills, but special skills and skills are not enough. A secretary needs technical training and sufficient experience to become a professional secretary. Automatic office offices are all formal and informal information systems, especially those relating to information communication to and from different people inside and outside the company. The product produced in this study is the Grip Work Journey Application. Our advice is the need for further development of this application as an application that facilitates office work.
IMPLEMENTATION OF GOOGLE CALENDAR AS AN ANDROID BASED AGENDA APPLICATION
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ABSTRACT

This study aims to describe knowledge in optimizing the implementation of Google Calendar as an Android-based agenda application. The research method in this study is survey method, descriptive data. Using Electronic Calendar according to Marsofiyati can help schedule meetings, change them, check the schedule. The use of electronic calendars is very useful for someone who has a very tight meeting schedule. The Google Calendar application is currently used by almost all users of web mail and android, but it is still rare to do research on the application. Preliminary studies that have been carried out by Kadek, Findra and Mandolang are building an application for managing activities and distributing these plans to many users on the Android operating system connected with data entered manually in the design of the leadership agenda application using mobile technology. Design a reminder application on mobile-based academic activities to distribute and remind lecturers and students in carrying out academic activities on schedule. The design application to simplify schedule management, create and present the agenda to the Chancellor is made with its own scheduling application, does not optimize Google Calendar as an existing application. Google Calendar is an application that can help schedule a good schedule, help schedule scheduling scales and remind schedules regularly so that users do not worry about skipping a schedule that has been set up even if the work piles up.

MUSLIM FASHION TRENDS: ANALYSIS AND PERSPECTIVE
Vera Utami Gp, Ernita Maulida, Esty Nurabety, Cholilawati Cholilawati

ABSTRACT

Indonesia has the largest country with the Muslim population in the world, where many Muslimah (women Muslim) wearing the hijab. At this time, muslimah attracted to change their conventional style into the modern way of dressing hijab. It caused the Muslim fashion is growing fast and the design is fashionable. The aim of this study is to analyze muslim fashion trend in Indonesia, and how to create Indonesia as a center of muslim fashion in the world. To express the phenomenon of the Muslim fashion trend in Indonesia will be analyzed through a qualitative approach. Data collected through interview, observation and literature study which related to the Muslim fashion trends. Muslimah dress or hijab became a cultural identity and communication, which means not only to carry out their religious orders but also to look them fashionable.
VALIDITY AND REALIBILITY AND CLOTHING DISPOSAL BEHAVIOUR INSTRUMENT

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ABSTRACT

An instrument of Sustainability and clothing disposal behavior (SCDB) is used to measure factors that influenced clothing disposal behavior. These factors involve 6 sub-constructs which are sustainability clothing disposal behavior, attitude, awareness on environmental issues, behavioral control, social norms and social action. The approach used was quantitative survey. The sample was selected using stratified and simple random sampling techniques. This instrument was administered on 393 fashion students in Fashion Design and Textiles (SRFT in Malaysia and Indonesia. Confirmatory factor analysis (CFA) was used to evaluate the construct validity of this instrument. The SCDB have reached the Cronbach alpha > 0.07 for the reliability of six sub constructs. The findings show that the measurement model is in accordance with the data and is accepted based on the goodness-of-fit measure of CMIN χ²=1984.484, degrees of freedom (df) 838, CMIN/df=2.368 (≤5.0), incremental fit CFI, IFI (≤0.9), and absolute fit RMSEA=0.8(≤0.8) further proved the construct validity. This instrument also obtained consistent and good internal validity which were convergent and discriminant validity. In summary, the research findings showed that the SCDB instrument achieved sound psychometric properties and can be used to measure the clothing disposal behavior. The findings of this study are also expected to provide awareness to the public regarding the importance of recycling textile products and clothing to reduce pollution. Knowledge and practice in sustainability clothing disposal behavior give an awareness to consumers about the importance of maintaining and to protect our environment.

MOLECULAR IDENTIFICATION OF PATHOGEN YEAST FROM STAR GOOSEBERRY (PHYLLANTHUS ACIDUS) AND CUCUMBER (CUCUMIS SATIVUS L) EXTRACTS

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ABSTRACT

In this study, two yeast pathogen strains, which had been isolated from spontaneous fermented extracts of cucumber and star gooseberry, were characterized by molecular methods. Identification of yeast isolates at the species level was performed with sequence-based analysis of the region spanning the D1 and D2 regions (D1/D2) of the large ribosomal subunit (LSU) have allowed for a more accurate identification of yeast species. The yeast identification procedure was based on the sequencing of the polymerase chain reaction (PCR)-amplified 600 base pair D1/D2 region of the yeast 26S ribosomal DNA, which was compared by a BLAST search to the D1/D2 regions of all validly described yeast species on file in the GenBank database, facilitating accurate and rapid identification. The results identified the yeasts from spontaneous fermented of extract star gooseberry and cucumber as Kodamea ohmeri (99%, 539bp) and Candida tropicalis (100%, 637 bp), respectively.
THE PH VALUE, TOTAL DISSOLVED SOLID AND SENSORY PROFILE OF SILKY PUDDING WITH EXTRACT “SECANG” WOOD (CAESALPINA SAPPAN L)
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ABSTRACT

The pH value, total dissolved solids (TDS) and sensory profile of silky pudding with extract “secang” wood were studied. Silky pudding is the one of the most populer desserts. Desserts of this type with added extract “secang” wood could be labeled with functional foods. “Secang” wood is one of the plant material that is commonly used as a natural dye for food, drinks and a potential source of natural antioxidants. The aim of this study was to determine the effect of addition extract “secang” wood 20% (v/v) and 40% (v/v) on pH value and TDS of silky pudding. The sensory profile of the silky pudding with extract “secang” was analized by spider chart. The pH value were quickly determined by portable pH meter extech, TDS atago hand-held refractometer N-1α, respectively. Analyses reveal that pH value and TDS was pH value range of 6.74-6.82 and TDS range was 13.0-13.2Obx. The extracts used in this study had influences on the profile sensory of the colour, taste, aroma and texture of silky pudding.

THE INNOVATION OF THE PURPLE SWEET POTATOES NOODLE PROCESSING (TEST OF SENSORY QUALITY ANALYSIS)
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ABSTRACT

The purple sweet potatoes as a local food ingredients can be used optimally for national food availability by improving the quality of noodle products using the right formulations is the goal of this study. The purple sweet potatoes noodles were tested through sensory quality by expert panelists including color, taste, aroma and elasticity. Substitution of wheat flour with 30, 40 and 50 percent of the purple sweet potatoes is still considered good quality for the purple sweet potato noodles. Hypothesis test results using the Friedman test at a significance level of α 0.05 proved that the purple sweet potato noodle with a 40 percent substitution was the best formulation. The implication of processing the purple sweet potato noodles is to reduce dependence on imported food ingredients such as wheat flour because it is expected that some of the food ingredients used can be replaced by local food sources such as the purple sweet potatoes.
ANALYSIS OF WORK SAFETY AND HEALTH RISK MANAGEMENT QUALITATIVES IN REDUCING CONSTRUCTION PROJECT COST OVERRUNS

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ABSTRACT

Occupational Health and Safety Risk (K3) management in construction projects is still often overlooked, even though the construction service industry is one of the industrial sectors that has a high risk of workplace accidents. In early 2018, work accidents often occurred in construction projects. The study results obtained the amount of the cost allocation for handling work accidents in construction projects by 37% of annual profit or 8.5% of the tender value or 5% of operational costs. The amount of the work accident cost allocation proves that the value of work accidents in the project is still high. Of the 80% of work accidents in construction projects there are 8% of accidents that have serious consequences such as serious injury or death. Given the high cost allocation and frequency of workplace accidents in this construction project, it is necessary to conduct research on qualitative analysis of occupational health and safety risk management in construction projects to reduce construction project cost overrun due to work accidents. The research methodology used is analytical descriptive, which is research that aims to describe or explain a work condition in a construction project which will then be analyzed qualitatively using the SNI method. The step in this study is to identify the risk factors that occur in construction projects, which will then be carried out in a qualitative risk assessment that can ultimately be established a risk control strategy that can reduce project costs.

INFLUENCE OF THE ADDITION OF THE ESSENTIAL OIL OF CINNAMON (CINNAMOMUM BURMANII) IN SOAP AGAINST SKIN CARE

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ABSTRACT

Cinnamon contain the compound eugenol 3.11% and sinemaldehyde (90.24%) and coumarin (53.46%), which can reduce acne blemishes on the skin oily face and thinning effect on stain, stain and acne busting speed. In addition cinnamon also contains vitamin C plays a protects the skin from UV rays from bad influences that cause premature aging and prevent the formation of melanin. Cinnamon can be processed into oil through distillation. Cinnamon essential oil can be mixed in cosmetic products such as herbal soap and utilized for skin care. On the research of herbal soap making was developed with a mixture of cinnamon oil. Stages starting from preparation of materials began processing Cinnamon Bark essential oil into cinnamon and mixed with essential oils in the formula herbal soap to become a soap product. Soap herb blend of cinnamon oil can be used to clean the face and removes the stain of acne scars. The research sample is 10 people's faces that are divided into two groups, the experimental group used the soap mixed with essential oils and a control group with treatment using facial Soap. Skin care treatment each as much as 8 treatment. The results showed there is influence of soap mixed with essential oils against the decline in the growth of acne scars dark flecks.
IMPLEMENTATION OF 2-INCH GRADING TECHNIQUE FOR MAKING BLOUSE PATTERN IN MODISTE BUSINESS
Harsuyanti R. Lubis¹

ABSTRACT

This study aims to create a model to make patterns for modiste customers in a faster way. The problem of this study derives from obstacles which are often experienced by modiste entrepreneurs in making patterns for customers. The result of the study of implementing an individual pattern using grading system shows that there are several points that still need attention for further research. These points are the position of the neck, waist and shoulder lines. Meanwhile, the front length, appearance of the bust, hip, and dart side are already good. The output of this research is a model to make patterns for modiste business, by applying pattern grading technique principles, for women's blouses.
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