## LIST OF PRESENTER ACEVE 2017

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PACKAGING FOOD DESIGN LABEL NUTRITION INFORMATION IN PRODUCTION UNIT OF TATA BOGA

Nining Tristantie, Esi Emilia, Ana Rahmi
Universitas Negeri Medan

Abstract

Today the functional food is not only focused as a 'pleasure' of tourism. The existence of health complaints and the emergence of health problems cause people pay attention to re-intake the food eaten. Globalizations has brought changes in various aspects of human life. This can be seen from the healthy lifestyle. It is indicated by the increasing of community awareness in consuming healthy food and the number of intelligent people grow more to critizised food processing by using materials, processing and accompanying processes. The demand for healthy food encourages food businesses such as restaurants, and cafeterias to innovate in consumer service is to inform food products that have nutritional value. Catering Production Unit is a canteen managed by students in serving processed food and beverages with market orientation of students, lecturers and employees in the campus environment. To improve services to consumers and fulfillment of healthy food standards it is necessary to do packaging design that accompanied Label nutrition information on the type of food and beverage products. The purpose of this study is to inform the nutritional value in the food content of the dish, is to design the packaging that can represent the character of healthy and nutritious food and beverage at the Production Unit (UP) of State University of Medan. Using a research and development approach as well as expert testing to validate packaging products, packaging design revisions and packaging trials. This research was conducted in August and November. Packaging design is done through the searching of creative ideas and literature studies and is based on the conceptual criteria of healthy, nutritious and hygienic food in terms of materials, process and processing. All these criteria are presented using the design principles of shape, color, line and texture. The results of the study conclude that the packaging design can help the production unit to inform the nutritional value for consumers. Healthy, nutritious and hygienic concepts can be represented through visualization of shapes, colors, textures and lines used in packaging design. Through Testing the effectiveness of food and beverage packaging products can assist consumers in meeting the nutritional needs that are attached to the nutritional value information label.

Topic: Engineering
REDUCTION OF HARMONICS BY USING SINGLE TUNED PASSIVE ON AUTOMATIC WASHING MACHINE

Siti Anisah¹, and Amani Darma Tarigan²

Electrical Department, Faculty of Engineering. University of Pembangunan Panca Budi, Medan, Indonesia
Email: sitianisah@dosen.pancabudi.ac.id

Abstract

The use of non-linear load in an automatic washing machine can cause harmonic distortion which will have the effect on bad quality of power. In order to cope with it, a single-tuned passive filter is designed and simulated with Matlab/Simulink in a condition before and after the installment of filter with different parameters in each automatic washing machine. The result of the simulation after using THDi single-tuned passive filter in each washing machine, it was known that, in the A THDi washing machine brand, it was 76.3% before being filtered and 8.06% after being filtered, in the THDi B washing machine brand, it was 94.1% before being filtered and 14.88% after being filtered, and in the THDi C washing machine brand, it was 121.8% before being filtered and 10.8% after being filtered.

Topic: Engineering
STUDY OF DRINKING WATER SUPPLY SYSTEM OF TAPANULI SELATAN

Rahmadhani Fitri

Landscap Architectural Engineering Pembangunan Panca Budi University, Medan, North Sumatera,
Email: rahmadhanifitri@dosen.pancabudi.ac.id

Abstract
The availability of drinking water is one of the basic needs and socio-economic rights of the community. The availability of drinking water is one of the determinants of improving the welfare of the people. It is which expected can improve the public health status, and it can encourage the increase of community productivity. so that there can be an increase in the economic growth of the community. Therefore, the availability of drinking water facilities and infrastructure becomes one of the keys in the development of regional economy. For that we need a strong basic concept to ensure it for the community in accordance with typology and conditions in the area. SPAM Sidempuan - Tapsel is managed by PDAM tirtanadi Tapanuli Selatan Branch and Tirta Ayumi PDAM. Due to the very low quality of shallow groundwater, the community dependence on PDAM Tirtanadi Tapanuli Selatan and Tirta Ayumi PDAM becomes very high. The new development aims to increase water production and expand the system with a minimum service target according to MDGs by 2015 is 74% for urban areas. With the new system development plan on the development of regional SPAM Padang Sidempuan - South Tapanuli Regency Add servant area for 2 (two) sub districts in each region.

Topic: Engineering
DIFFERENCE KWH METER PAYMENT WITH PREPAID PAYMENT

Zuraida Tharo

Electrical Department, Faculty of Engineering, University of Pembangunan Panca Budi, Medan Indonesia
Email: zuraidatharo@dosen.pancabudi.ac.id

Abstract

Border and measuring devices (APP) are often known as KWh meters. There are two types of KWh meters is KWh Postpaid and KWh Prepaid. Comparison of Postpaid between Prepaid KWh aims to determine the calculation of each limiting device and measurement, to know the economic value of each KWh meter type and to know the advantages and disadvantages of each KWh meter type. The working principle of Postpaid KWh uses the induction method of the magnetic field where the magnetic field drives a dish made of aluminum. The rotation of the disc will drive the digital counter as the display of the number of KWhs. Prepaid KWh is a measurement tool that has the function of measuring, it is a amount of energy usage or the amount of power consumed in unit so f time and working on the program designed on the microprocessor contained within the digital KWh meter device and prepaid pulse program.

Topic: Engineering
ANALYSIS THE PALM SOLID WASTE ENERGY POTENTIAL AS REFUSE DERIVED FUEL WITH DIFFERENT COMPOSITION

H Saputro, S Lasmini, R Muslim, T Firdani, Khaniffudin, D S Wijayanto

Sebelas Maret University

Abstract

The aim of this research to analysis the sugar palm solid waste energy potential as Refuse Derived Fuel with different composition. This is experimental research. This research method use different composition, caloric value, dry moisture, volatile mater, and ash as variable. Palm solid waste is mixed with plastic and coconut shell with 5 different ratios (1: 9; 2: 8; 3: 7, 4: 6, 5: 5). Data collection using bomb calorimeter for calorific value and calculation based on ATM D-3173 for moisture content, ASTM E-897-88 for volatile matter and ASTM E-830-87 for ash content. Result of this research show that palm waste potentially could be utilized as RDF with variation of coconut shell or plastic composition. The most optimum calorie value RDF, RDF test result was pastic with variation of composition with 5: 5 ratio of 6311.26 cal / gram and coconut shell mixture with ratio of 5: 5 3909.67 cal / gram. The analisys of RDF as the biggest potential utilization of electric power is 11,009 MW of electric energy a hour, 264.21 MW a day, and 96.43 GW a year with the assumption of 1,500 kg a hour.

Topic: Engineering
[ENG - 07]

REVIEW OF GREEN BUILDING ASPECT ON TYPICAL THE OLD HOUSE AND THE PRESENT HOUSE

Kemala Jeumpa
Lecturer of Engineering Faculty, Universitas Negeri Medan

Abstract

This paper was purposed to review the fulfillment of the green building aspect of the old house and the present house. The development of the human needs of the house turned out to be such that bring up the forms of building culture in accordance with the type of human needs. But developments in building and human activity around the world are also one of the causes of global warming phenomenon, where building construction is one of the biggest emitters of global carbon dioxide emissions as one of the causes. That is why the concept of green building is a concept for sustainable buildings that embrace the principles of energy saving and must have a positive impact on the environment, economic and social. The house as a protector that also must be united as part of the environment then the green building aspect should have been fulfilled in the house building since the first. Based on this, the review of the house old and the present houses on the fulfillment of green building aspects that began to be promoted since the emergence of the phenomenon of global warming. In this case there are six aspects of green building that are reviewed in house building that are: Appropriate Site Development, Energy Efficiency and Conservation, Water Conservation, Material Resources and Cycle, Indoor Health and Comfort, Building Environment Management. A review of the building was conducted by random observation based on a typical building of its time. The results obtained turn out to be typical of the house old of green building aspects such as Appropriate Site Development, Energy Efficiency and Conservation, Water Conservation, Material Resources and Cycle, Indoor Health and Comfort, Building Environment Management has been fulfilled more than the typical of the present house.

Topic: Engineering
PRELIMINARY STUDY OF AN INTERNAL COMBUSTION ENGINE FUELLED BY PRODUCER GAS OF BIOMASS AS THE RENEWABLE ENERGY

Janter¹, Eka², Lisyanto³, Bisrul⁴

Universitas Negeri Medan

Abstract

In this work, a survey of previews research published papers on utilization of producer gas of biomass gasification in a reciprocating internal combustion engines (RICE’s) is carried out. Biomass gasification reactors coupled with this type of engines are a viable technology for small scale heat and power generation. The direct use of dry biomass as a fuel substitution could be of great interest because of the large availability of plant matter and the versatility of this engine. This paper contains information gathered from a literature study on the possibility of producer gas used for internal combustion engines.

Topic: Engineering
NUMERICAL STUDY OF FLAME STABILIZATION IN MICRO-COMBUSTORS WITH DIFFERENT DESIGNS OF MESO-SCALE TUBES AND WIRE MESH POSITION

Danar Susilo Wijayanto, Herman Saputro, Aris Purwanto, Laila Fitriana, Fudhail Bin Abdul Munir
Sebelas Maret University

Abstract

Recent developments in micro power generation have shown that combustion within a confined space; even in submillimeter scale is achievable. In recent years micro power generation systems have been seen as potential alternatives to batteries due to the higher energy densities of hydrocarbon fuels. The combustion characteristics of micro-combustors in different designs of meso-scale tubes and wire mesh position were studied numerically in order to get the flame stabilization. Generally, the difficulty in sustaining combustion in micro scale devices is related to the substantial heat losses due to the large surface area to volume ratio and the physical time available for the combustion to occur. To stabilize flame in micro-combustors, a proper thermal management is required. Many approaches can be utilized to enhance the flame stability. The simulation was conducted in 2-D and 3-D steady state model by using the ANSYS Release 14. The fuel type used was propane (C3H8)/air mixture. The inner diameters of the combustor are 3.5 to 5 mm and the wall is 0.5 to 0.7 mm thick. The results have shown that the position and model of the designs of meso-scale tubes and wire mesh position have a direct relationship with the characteristics of flame stabilization in the micro-combustors. The detail explanation of improvement of flame stabilization in the micro-combustors in different model of tubes and wire mesh position will be discussed in this paper.

Topic: Engineering
COMPARISON OF PASSIVE LC AND PASSIVE SINGLE TUNED FILTERS IN REDUCING CURRENT HARMONICS

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University of Islam North Sumatera,
University of North Sumatera,
State University of Medan

Abstract

Harmonics generated by non-linear loads will cause the current to be in the form of short pulses. From the measurement data conducted, there is a harmonic on Individual Harmonic Distortion (IHDi) 5th order on current transformer that is not compliant with IEEE 519-1992 standard. In this study aims to compare the use of passive LC filter with Passive Single-Tuned Filter in reducing harmonics current is simulated using computer program. The simulation results show that the Individual Harmonic Distortion (IHDi) 5-current flow in the current transformer is reduced according to IEEE standard 519-1992 where IHDi order 5 is reduced to 0.04% using Passive LC Filter and 1.14% using Passive Single-Tuned Filter and THDi decreased to 0.28% using Passive LC Filter and 2.54% using Passive Single-Tuned Filter.

Topic: Engineering
IMPROVEMENT OF TANJUNG REJO CLAY SOIL WITH ASH PALM SHELL TO RAISE STRONG GROUND SHIFT AT THE REVIEW WITH DIRECT SHEAR TEST

Debby Endiani
Medan Institute of Technology

Abstract

Dusun Paloh 80 is located in Tanjung Rejo Village Percut District, Deli Serdang Regency. The soil in this area has a very ugly soil texture or high water content so that there are many damaged or bumpy roads when it has done pavement on it. The research needs to be done by stabilizing the soil by adding the use of solid waste of palm shell as an alternative material of cement replacement. Research conducted include physical properties and mechanical properties. One of the showers is direct shear testing (Direct Shear). Variations of palm kernel ash used were 0%, 5%, 10%, 15%, 20%. From the results of the research shows that the land of Tanjung Rejo, according to USCS is classified as clay (CL). Based on the AASHTO system belonging to the group A7-5 which is a type of clay soil. In direct shear strength testing (Direct Shear) shows the existence of increased behavior that occurs due to the horizontal voltage so that minimize the pore water entering the soil cavity. The greatest increase occurred on physical properties and mechanical properties and direct shear direct shear in 20% palm shale ash

Topic: Engineering
IMPROVING ONE TIME PAD ALGORITHM ON SHAMIRS THREE PASS PROTOCOL SCHEME WITH RSA AND ELGAMAL ALGORITHM

Agung Purnomo Sidik, Syahril Efendi, and Suherman

Universitas Sumatera Utara

Abstract

This study aims to cover the shortcomings of the one time pad algorithm used in the shamirs three pass protocol scheme. In this study, the technique used to cover the weakness of one time pad algorithm is to change each cipher text generated from the three paths in the three pass protocol scheme. Changing cipher text is done by encrypting the cipher text again with RSA algorithm and Elgamal algorithm to generate super cipher text. The first line and the third line, it is using the RSA algorithm. But for the second line, it is using Elgamal algorithm. The use of RSA and Elgamal algorithms is aimed at keeping no secret key exchange which is a major requirement of the three pass protocol scheme. The results show that the weakness of one time pad algorithm can be overcome very well, but the process time of three pass protocol will increase. The results also show that the resulting super cipher text is very resistant to cryptanalysis attacks with known-plaintext analysis, chosen-plaintext analysis, and ciphertext-only analysis. The only way for plain text to be formed by cryptoanalisis is they must succeed to describe the three super cipher texts back into the three initial cipher texts first, so that XOR operations can be performed to generate plain text from the three initial cipher texts.

Topic: Engineering
Abstract

This study conducted the gasification simulation of palm starch waste with focuses on Syntetic gas (Syngas) performance by using the Energy Gibbs Minimum method. The palm starch waste was changed as the RDF 5 (Refuse Derived Fuel) by pelletization process. The investigation of palm starch waste RDF in TekMIRA laboratory show that the palm starch waste has Carbon (C) 38.74 %, Sulfur (S) 0.07 %, Hydrogen (H2) 6.41 %, Nitrogen (N2) 0.26 %, and Oxygen (O2) 51.25 %. This data was used as the input parameter for the gasification simulation mixed with oxygen and moisture in air dried. The simulation results shown that palm starch waste could produce syngas 119,241 kg/hr (CO, CO2, H2, CH4) with good efisienyi 94 %. Therefore, the palm starch waste has good potential energy as gas fuel (syngas) through the pelletization process and gasification.

Topic: Engineering
NUMERICAL INVESTIGATION OF FLAME STABILIZATION IN SINGLE-STEP OF CYLINDRICAL MICRO-COMBUSTORS WITH WIRE MESH

Herman Saputro, Laila Fitriana, Danar S. Wijayanto, F.A. Munir
Universitas Sebelas Maret

Abstract

The instability of flame in micro combustion is a common dilemma faced by researchers, mainly caused by the massive heat loss. The numerical investigation was conducted to determine the effect single-step of cylindrical micro-combustors with wire mesh to the flame stability in micro-combustors. Numerical simulations performed using commercial Computational Fluid Dynamics (CFD) software, ANSYS Release 16.2. Micro-combustor was divided into two parts, i.e., unburned region and burned region. The unburned region has a length \( L_u \) 30mm, inner diameter 3.5 mm and thickness 1 mm. Meanwhile, the burned region has a length \( L_b \) 20 mm, inner diameter 4.5 mm and thickness 1 mm. Wire mesh installed between the burned region and unburned region. The numerical results showed that the stable flame of single-step of cylindrical micro-combustors with wire mesh for equivalent ratio \( \phi = 1 \) is at flow velocity between 10 - 45 cm/s. The optimum temperature generated by the stable flame on single-step of cylindrical micro-combustors with wire mesh is 2558.68 K underflow velocity \( U \) 30 cm/s.

Topic: Engineering
FEASIBILITY AND EFFECTIVENESS INSTRUCTIONAL MATERIALS METAL COATINGS TECHNIQUES BY USING INSTRUCTIONAL STRATEGY OF PROBLEM BASED LEARNING (PBL)

Erma Yulia
Universitas Negeri Medan

Abstract
This research aims to find out the feasibility and effectiveness of instructional materials of metal coatings by using instructional strategy of problem based learning at Educational of Mechanical Engineering Study Program of UNIMED. The methode used was Research and Development Approaching Methode (R & D) by Borg and Gall. The model development phases for the studies referred to the development model of Dick and Carey, consisting of identification phase, development phase and evaluation phase. Data collection technique was performed through observations, questionnaires and objectivity tests. The result of study development was lessons on metal coatings at electroplating study program by using strategy of problem based learning. The Model feasibility was determined by having some experts’ validations, one to one evaluations and small group evaluations. The results of experts’ validations, one to one evaluations and small group evaluations showed that the study developed was feasible to be used. The effectiveness of study was obtained from Pretest and post test which was conducted at field trial, and proved the increasing of study results i.e 79,92%. The research and development delivered good implications to the improvement of students’ learning outcomes who were taking part in metal coatings study program.

Topic: Engineering
[ENG - 17]

MODIFICATION K-MEANS MODEL WITH LOCAL DEVIATION METHOD TO IMPROVE THE ACCURACY IN FORMING CLUSTERS

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1) Computer Science Department, Universitas Sumatera Utara
2) Computer Science Department, Universitas Sumatera Utara
3) Mathematic Department, Universitas Sumatera Utara,

Abstract

K-Means is one method in data mining that can be used to perform grouping / clustering of data (Winda, 2015). However, in the process of calculating the distance of euclidean K-Means has obstacles in calculating the value of linkage of each variable x_i-x_n and y_i-y_n, so that the cluster formation is modified by using local deviation measurements. At the local deviation each distance the variables are calculated and the average is determined so that a new rule will be established between x and y sigma. In this case k-means will try to predict the timely graduation, which divided into two category that is semester (x) and credit semester variables (y). The results obtained from the modification algorithm form have two rules that is timely (x=146, y=8) and not timely (x=146, y=10). so it can be concluded that the value of accuracy obtained from the testing system calculated by k-means modification of 89% while the traditional k-Means of 67%.

Topic: Engineering
CURE CHARACTERISTICS, SWELLING BEHAVIOUR AND TENSILE PROPERTIES OF CARBON BLACK-FILLED NATURAL RUBBER (NR)/CHLOROPRENE RUBBER (CR) BLENDS IN THE PRESENCE OF ALKANOLAMIDE

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²Department of Mechanical Engineering, Universitas Negeri Medan, Medan, Indonesia

Abstract

The cure characteristics, swelling behaviour and tensile properties of carbon black (CB)-filled natural rubber (NR)/chloroprene rubber (CR) blends in the presence of alkanolamide (ALK) were investigated. The ALK was prepared from Refined Bleached Deodorized Palm Stearin (RBDPS) and diethanolamine and added into the CB-filled NR/CR blends as a rubber additive. The ALK loadings were 0.0, 1.0, 3.0, 5.0 and 7.0 phr. It was found that the ALK exhibited shorter scorch and cure times and higher elongation at break of the CB-filled NR/CR blends. The ALK also exhibited higher torque differences, tensile modulus and tensile strength up to 5.0 phr of ALK and then decreased with further increases in the ALK loading. The swelling test proved that the 5.0 phr loading of ALK caused the highest degree in crosslink density of the CB-filled NR/CR blends.

Topic: Engineering
THE WORLD OF BUSINESS AND INDUSTRY ROLE FOR COLLEGE STUDENTS

Rumilla Harahap, Kemala Jeumpa, Irma N. Nst

Universitas Negeri Medan

Abstract

This activity aims to encourage universities education products policy in developing learning the importance of business and industry role. The role of business and industry is to create activity that can increase knowledge, discipline, responsibility, honesty and technologies that are acquired outside of class. The problems on the activities are the condition of the students that lack of interest to work in the following scientific programs, either in community service activities and activities of industry practices in the business world. This activity is also a motivation to improve student competence in student creativity program such as scientific work. Data collection is acquired through observation, in-depth interviews and documentation. Data analysis techniques include data reduction, data presentation and conclusion. Then proceed with a public lecture and a visit to the field of student creativity to get a real picture of industrial products and businesses that grow in the community. The results of this activity shows the graduates who have standards and comparative advantages in their field. Encouraging commitment so that the business world participate actively in the development of learning and be able to unlock insights and creativity.

Topic: Engineering
STUDY OF EFFECT OF POZZOLANIC BINDER ADDITION ON ENHANCING GEOTECHNICAL PERFORMANCE ON STABILIZATION PROCESS OF POLLUTED SEDIMENT

Ernesto Silitonga¹, Jintar Tampubolon², Edim Sinuraya³, Iskandar Tambunan³, Nono Sebayang

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Abstract

Large amount of sediment dredged every in Europe especially in France. Regardful to the European regulation in Environmental protection, the polluted sediment should be investigated first to identify the hazardous level of polluted sediment to the environment. Before the polluted sediment can be used as new material, a stabilization process is needed to reduce the pollution level of polluted sediment. Because of the cost required to stabilize the polluted sediment is very high then the beneficial reuse of polluted sediment is urgently needed to realize. The main objective of this experimental study is to identify the opportunity of the reutilization of polluted sediment as new material. The polluted dredged sediment was taken from Port de Bessin Basse-Normandie France. The primary goal of this study is to stabilize dredged sediment so that dredged sediment could be used in road construction as a replacement material, which is needed to fulfill the road regulation criteria and harmless to environment. However, on its application, due to drying and oxidation process of polluted dredged sediment may affect mobility and bioavailability of the land utilized. In order to achieve the primary goal, the addition of Silica Fume was realized. The Fly ash used in this study is mixed and designed for industrial utilization. The goal of Silica Fume addition besides to improve the geotechnical performance, is aimed to reduce the pollution level, especially the heavy metal content. The several tests were realized to identify the compatibility of polluted sediment to be utilized as replacement material in road construction. The chemical test (Toxicity Characteristic Leaching Process) is the second step to evaluate the environmental impacts of the material. After stabilization process, the result of the experiment proved that the addition of Silica Fume succeed to enhance the geotechnical properties and reduce the pollutants level and confirmed that the stabilization of dredged sediment with Silica Fume can be used as a replacement material and harmless to the environment.

Topic: Engineering
NUMERICAL STUDY OF FLAME STABILIZATION IN MICRO-COMBUSTORS WITH DIFFERENT DESIGNS OF MESO-SCALE TUBES AND WIRE MESH POSITION

Danar Susilo Wijayanto, Herman Saputro, Aris Purwanto, Laila Fitriana, Fudhail Bin Abdul Munir
Sebelas Maret University

Abstract

Recent developments in micro power generation have shown that combustion within a confined space; even in submillimeter scale is achievable. In recent years micro power generation systems have been seen as potential alternatives to batteries due to the higher energy densities of hydrocarbon fuels. The combustion characteristics of micro-combustors in different designs of meso-scale tubes and wire mesh position were studied numerically in order to get the flame stabilization. Generally, the difficulty in sustaining combustion in micro scale devices is related to the substantial heat losses due to the large surface area to volume ratio and the physical time available for the combustion to occur. To stabilize flame in micro-combustors, a proper thermal management is required. Many approaches can be utilized to enhance the flame stability. The simulation was conducted in 2-D and 3-D steady state model by using the ANSYS Release 14. The fuel type used was propane (C3H8)/air mixture. The inner diameters of the combustor are 3.5 to 5 mm and the wall is 0.5 to 0.7 mm thick. The results have shown that the position and model of the designs of meso-scale tubes and wire mesh position have a direct relationship with the characteristics of flame stabilization in the micro-combustors. The detail explanation of improvement of flame stabilization in the micro-combustors in different model of tubes and wire mesh position will be discussed in this paper.

Topic: Engineering
THE IMPLEMENTATION OF THE DIRECT LEARNING MODULE-TOOLS IN
ACHIEVING COMPETENCY TO FASHION TECHNOLOGY
STUDY PROGRAM: TATA BUSANA

Rasita Purba, Flora Hutapea dan Nurhayati, Tj.
Dosen Fakultas Teknik, UNIMED

Abstract

The objective of this study are: (1) to see the implementation of a direct learning module-tools how to achieve a competency with a technique provide variously seams to clothes of student Pendidikan Tata Busana. (2) to know gaining competency technique provide variously seams on clothes of students Pendidikan Tata Busana. This study was done on Faculty of Engineering State University of Medan. The respondent to this study comprised student in Semester 3 Group A involved 35 students. This study is a class-room action research. This research consist of pre-test and post-test stages, done in two cycles. This study is a learning module-tools with topic provide various seams on clothes. The results indicated (1) Applied Direct Learning Model with Module-tools can improve their performance under the subject Technology of Clothes, (2) refers to the pre-test provided in students obtained average score 69.77 and implementing post-test I cycle I obtained average score 76.25. It is noted 24 students (68%) had not achieved any improvement yet. (3) by the result of implementing Post-test II (cycle II) obtained average rate 83.4. It was noted 89% had achieved improvement of learning and another 11% had not achieved any improvement. In correlated to the result as above, it is suggested such as (1) those lecturer Subject of Basic Productive specifically technology of fashion to apply variety model of learning refers to the material of learning, interested and encouraged those students to study for allowing atmosphere and effective learning-studying and (2) it is hoped the students to take part actively in learning-studying process, in order to improve their performance.

Topic: Teaching and Learning
INCREASE IN POLICY RESEARCH PROGRAM STUDI TATA BUSANA

Nurmaya Napitu, Rasita Purba, Wulan Sari Purnama, Tuesryana Simanjuntak

Abstract

This study aims to examine and analyze: 1) Effect of Work Experience Student Readiness PKLI against Prodi force busanan education system 2013/2014. 2) Influence of Entering the World of Work Motivation to Work Readiness student education study program generation system busana 2013/2014.

The population of this study were all students of fashion Prodi force in 2013 who have completed courses totaling 72 students PKLI where the sample in this study is the entire population. This research variable consists of two independent variables namely X₁ PKLI experience, X₂ work motivation, and bound variable Y is the job readiness of students of fashion.

Data collection techniques used is by using questionnaires, while Mechanical Test Validity Test Instruments used for item questionnaire using Correlation formula Product Moment and test reliability is calculated using Cronbach Alpha. Prerequisites analysis techniques using Normality Test and Test of linearity, while the analytical techniques used t test was used to test the hypothesis by partial effect of variable X₁ and X₂ of the formula Y. t test

Topic: Vocational Education
GUIDANCE BASED ON KKNI IN FASHION EDUCATION SECTION

Surniati Chalid, Ermidawati and Yudhistira Anggraini

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Abstract

This research is purpose to find out the effectiveness of the development of a practicum guide in the fashion laboratory FT Unimed. This research was conducted in Faculty of Engineering (FT) State University of Medan (UNIMED). The development of the Guidebook/Jobsheet in productive basic courses (Fashion Technology, Pattern Construction, Basic Art and Design) is done based on the stages as contained in the procedure. The aspects are revised and refined based on data analysed and tested as well as input from material experts and design learning experts and the students who use the Guidebook / Jobsheet. It aims to explore some aspects that are common in the process of developing a product. The components contained in the development design of the Guidebook / Jobsheet have excellent material and design and suitable for use based on terms of content, feasibility of presentation, language feasibility and graphic feasibility.

The results of questionnaires from the study material experts gave responses of 82.6%. They say the material is worthy to use because it contains materials and criteria that meet the standards of message delivery to the students. Meanwhile, the designs expert gave responses of 87.09% worthy to use because it has been designed in such a way and meets the design standards of learning. The results of percentage of small groups obtained an average score of 56.8%. The result of percentage of the average group obtained an average score of 76.8%. And the result of percentage of field trials obtained an average value of 86.20%. Based on the findings and discussion, it can be concluded that the Guidebook / Jobsheet based on the National Qualification Framework of Indonesian (KKNI) on the productive basic courses (Fashion Technology, Pattern Construction, Basic Art and Design) have been prepared by the fashion education expert with the achievement of learning which are expected.

Topic: Vocational Education
HEADMASTER IN THE FRAMEWORK OF TEACHER PROFESSIONALISM

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Abstract

This study aims to describe: (1) the role of principal as a supervisor, and (2) techniques used in instructional supervision. This research uses qualitative approach with multisitus research design. Data were collected using in-depth interview techniques, observation and documentation. There are two data analyzes including individual case data and whole case data analysis. The findings obtained (1) the role of the principal as a supervisor increases the overall success of school learning programs by helping teachers solve problems in the classroom; (2) supervisory techniques carried out by the principal are class visits, private meetings, regular meetings, inter-school visits, meet in groups, job training and upgrading

Topic: Vocational Education
KEMP APPLICATION OF LEARNING MEDIA BASED E-LEARNING IN VOCATIONAL HIGH SCHOOL

Baharuddin

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Abstract
This study aims to development of learning media based E-learning. This research is motivated by the lack of vocational students' learning outcomes. Students difficult to understand the subject matter due to less media used by educators that can lead to creative thinking power of the material being studied. The research method using the Research and Development (R & D) and combined with instructional design the Kemp Design model. Feasibility studies towards learning of E-learning by media experts showed an average of 4.2 and expressed "very decent" and materi testing by experts showed an average of 4.3 expressed "very decent". Testing phase one to students by an average of 4.4, and are categorized as "Very Good" and the Testing phase two average of 4.4, and are categorized as "Very Good". Based on the results of feasibility and testing of media experts and material experts as well as the students, it can be inferred media based learning E-learning is very good and deserve to be used as a medium of learning.

Topic: Vocational Education
THE DEVELOPMENT OF CLINICAL SUPERVISION BASED ON SELF ASSESSMENT: PRELIMINARY STUDY

Irnes Jakli Sy, Rusdinal, Herman Nirwana, Alizamar

Abstract

This research is based on the fact that the implementation of clinical supervision by the supervisors has not been focused on teacher problem in teaching and learning process especially in Solok regency, thus impact to ineffective achievement of supervision goals in improving teachers’ teaching skills. To improve the effectiveness of clinical supervision requires a clinical supervision model that begins from self-assessment activities felt the weaknesses by teachers in teaching and learning process. The purpose of the research is to describe how the implementation of clinical supervision and model factual in current situation. The research method used was Research and Development (R&D). In developing the model used 4D model. The preliminary research conducted in survey research. The sample was determined 37 educational supervisors in Solok regency. Data were collected through questionnaires and supported by interviews. The collected data was analyzed by using descriptive statistics to determine the percentage, while the data from interview was by presented by descriptive analysis. The results showed that the implementation of the clinical supervision: 1) the implementation of the initial meeting was conducted 22%, 2) Class observation was done 85%; 3) Analysis and interpretation of observation result and determined the approach of meeting 81%; 4) The final meeting with the teacher was 74%, and 5) Discussion on the previous 4 steps is done only 35%. Overall clinical supervision is supervised by Supervisors is 59.4%. The dominant model of clinical supervision used was begun by a meeting before class observation, classroom observation and providing input to the weaknesses found in the lesson.

Topic: Vocational Education
THE IMPLEMENTATION OF TEACHER TALK IN VOCATIONAL CLASSROOM INTERACTION

Masniati Murni Ritonga1, Zubaidah Hanum2

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Abstract

This study is conducted to analyze and describe the types of teacher talk deployed by the vocational lecturers in classroom interaction, the most dominant types of teacher talk, the way of the vocational lecturers deployed the types of teacher talk and the reason they deployed them as they do. The study was conducted by qualitative content analysis method. The data were taken randomly from the utterances uttered by Politeknik LP3I Medan Lecturers (6 samples) and gathered from two different sessions, and then they were transcribed. The transcriptions were analyzed by applying qualitative method based on the Theory proposed by Flanders (2010). The findings found that all types of teacher talk were deployed by all lecturers. The most dominant types of teacher talk deployed by the lecturers is giving direction in form of direct talk. There were some reasons of deploying Teacher Talk as he is such as the lecturers, his role in the classroom interaction to direct students to be active and participate in the classroom interaction. Furthermore, in the vocational school, the students aim to act not to sit and listen, thus the lecturers tend to derive students to act and practice rather than giving a long bored lecturing. The next reason is that vocational school as the place for lecturers and students to cooperate and solve a problem together. Therefore, context of teacher talk plays the main role to create practical students who are ready to the real life and job requirement.

Topic: Vocational Education
SPORT AND HEALTH EDUCATION MODEL THROUGH PLAYING ACTIVITIES TO CONSTRUCT STUDENT CHARACTERS VALUE: PRELIMINARY RESEARCH

Mhd. Ashar(1), Syafruddin(2), Gusri(3), Eri Barlian(4),

State University of Padang, Indonesia

ABSTRACT

The research was begun from some problems faced by elementary school students in Pasaman regency. Elementary school students are faced to shifting behavior values, attitude and, character when the sport and health education subject learning process. Some students are fighting, mutual abuse and even a bullying by asking for some money to his classmates, while the nature of learning process is construct characters value. To construct the value of the characters needs to be a learning model that leads learners to have character. This purpose of research is to describe the application of character values in the current learning process. Specifically the purpose of research is to measure the level of validity, practicality, and effectiveness of the learning model. The research method used is Research and Development (R & D) with ADDIE model, the procedure are analyze, design, development, implementation, and evaluation. The sample is selected by using area probability sampling technique. 50 students selected from the fifth grade from three elementary schools in Pasaman regency. The preliminary study data were collected by using questionnaires and interviews, then analyzed using descriptive statistics and descriptive analysis. The preliminary study results show that the average test score from 50 students is 60.50 point with five sets of test materials, playing at school 60 point, playing outside of school 50 point, learners participation at play time 40 point, character of awake learners 30 point and problem faced when playing 70. The value of such data can be categorized very low and the authors conclude that it is necessary to design a learning model of sport and health education subject to construct character value of elementary school students.

Topic: Vocational Education
THE DEVELOPMENT OF TRAINING MODEL OF ART OF MUSIC FOR SMA ART AND CULTURE TEACHERS: PRELIMINARY RESEARCH

Iswandi, Yasri, MS., Nurhizrah Gistituati, Ardipal

Abstract

This research and development is motivated by the problems faced by teachers of art and culture subjects of Senior High School (SMA) in the Province of West Sumatra. Teachers of art and culture only master one art field, while the art of culture consists of the art of drama, dance, and music or visual art. In the 2013 curriculum, teachers of cultural art are required to teach the four branches of art. Not being able to teach the four areas of art is evidenced by the acquisition of the average value of Teacher Competency Test (UKG) which is still relatively low, with an average value of 60. One of the efforts in improving the competence of art and culture teachers is through the development of training models that can improve the ability of high school art and culture teachers in the field of art of music both in theory and practice. More specific research and development objectives are to measure the validity, practicality, and effectiveness of the training model. Research method used is Research and Development (R & D) with procedural development; Analyze, Design, Development, Implementation, and Evaluation (ADDIE). The sample is determined by 40 art and culture teachers with area probability sampling technique. Preliminary study data were collected using tests and interviews, and then the data were analyzed using descriptive statistics and descriptive analysis. The results of the preliminary study showed that the average test score of 40 art and culture teachers was 58.75 with four groups of test materials, namely 70 for music knowledge, 50 for vocal techniques, 40 for song composition, and 75 for musical performance management. The results of the data can be categorized as very low and thus the authors conclude that it is necessary to develop a model of musical art training to improve the competence of high school teachers of culture and art in the field of art of music.

Topic: Vocational Education
THE DEVELOPMENT OF MATHEMATICS LEARNING MODEL BASED REALISTIC MATHEMATICAL EDUCATION AND LITERACY IN JUNIOR HIGH SCHOOL: THE PRELIMINARY RESEARCH

Rusdi\textsuperscript{1)}, I Made Arna\textsuperscript{2)}, Ahmad Fauzan\textsuperscript{3)}, Lufri\textsuperscript{4)}

\textsuperscript{1,3,4}UNP Padang, Indonesia\textsuperscript{2)} UNAND Padang, Indonesia

Abstract

This research had a background in the low ability of mathematical literacy of Indonesian students based on PISA International survey. Since it was joined by Indonesian students from 2000 to 2015, the mathematical literacy ability of Indonesian students was always at the lowest position under the average International score. The result indicated that more less nine years of mathematics learning, the Indonesian students could not solve the mathematical problems in the daily life and they did not care of the mathematical phenomenon around them. There were a lot of methods or learning approaches which were able to facilitate the improvement of students’ mathematical literacy. One of them was RME. In Indonesia, since RME was introduced in 2001, there were a lot of teachers or researchers who applied and developed mathematical learning by doing RME at schools. Nevertheless, from 2001 till now, there can not be seen the good improvement of Indonesian students in International yet. Even though RME was to improve the students’ ability in mathematical literacy implicitly, the minimum of teachers’ and researchers’ knowledges about the concept of mathematical literacy was the cause of the low of students’ mathematical literacy ability. Therefore, it was needed a mathematical learning model having a base RME that was combined with the concept of mathematical literacy. This research focused on the preliminary research about the development of mathematical learning model namely, RME and Literacy in junior high schools in Indonesia.

Topic: Vocational Education
THE ANALYZE OF ELEMENTARY STUDENTS’ MATHEMATICS MATHEMATICAL CONNECTIONS SKILL

Neni Hermita, Achmad Samsudin, Muhammad Fendrik, Hendri Marhadi, Lazim N, and Guslinda

Universitas Riau

Abstract

This research is lead constructed on the analysis of teaching which is indecent with Mathematics teachings agreeing to KTSP and UNESCO. It is found that educators reflect Mathematics learning activity as practices. Concentration of this research is generally about the analysis of Mathematic connection skills of 5th grade children in an Islamic School in Bandung. A qualitative grounded theory approach is charity by responsibility some relations with applicants in the ground and increasing a theory inductively. The subjects of study are 20 children, including 16 boys and 4 girls. The data is inspected by leading reliability test that contains of the expending of orientation measurable and triangulation. The result of study proves that children, who obligate great skills of attainment agreeing to the teachings certain by the educator, are able to act the sign of Mathematics connection skills kids.

Topic: Vocational Education
THE PERCEPTION OF SUSTAINABLE TRAINING FOR SUPERVISOR OF ELEMENTARY SCHOOL

Erpidawati

Universitas Muhammadiyah Sumatera Barat

Abstract

This research aims to describe the perception of the elementary school supervisors related to the training that has been followed. This study is designed in descriptive. The researcher collected the data through the questionnaire and interview which were then analyzed by using descriptive qualitative. The subject of the research is the elementary school supervisors about 30 people. The study revealed that 45% of respondents stated that the training could increase the competence in the supervision process. However, 55% of the supervisors reported that the training that followed was not maximal. The learning process could not be absorbed as a whole. The material given is too crowded, while the implementation time is limited. After the training is completed, the implementation in the field is rarely carried out monitoring or evaluation; in this case, the training has not been implemented sustainable, so that the understanding of the competence is maximal. Based on the aspect of motivation, 60% of respondents said the training that followed could increase the motivation to further improve the supervisory competence and performance following what is expected.

Topic: Vocational Education
READINESS OF COLLABORATION BETWEEN THE AUTOMOTIVE TECHNICAL EDUCATION PROGRAM WITH WORLD OF TRADES/INDUSTRIES IN MEDAN AND SURROUNDING AREAS

Lisyanto, Andi Bahar, Riski Elpari Siregar

Jurusan Teknik Mesin - Fakultas Teknik - Universitas Negeri Medan

Abstract

The Automotive Technology Vocational Education Studies Program (ATVE-SP) aims to produce competent and professional teachers and instructors in automotive engineering field. Strengthening cooperation with automotive trades/industry (ATI) in a partnership scheme is a strategic effort to realize that goal. The scope and the level of ATI world readiness in Medan and surrounding areas have been done in this study. This study has been done by surveying the leaders or managers of ATI as a research subject. Data of the cooperation scope and readiness level of ATI were collected using questionnaires and interview guidelines. Furthermore, the data were analyzed descriptively. Mostly, ATI in Medan and surrounding areas are willing to cooperate with ATVE-SP in curriculum development, Fieldwork Practice, and graduate users. Only a small number of ATI are willing to cooperate in the scope of practicum tools development, lecturer and technician training, and product research and development. Readiness of ATI in cooperation with ATVE-SP is sufficient.

Topic: Vocational Education
This study aims to examine scientific approach through problem based as one of innovative learning in the 2013 curriculum. Method used in this study is literature review which is related to scientific approach and problem based learning. Based on the result of literature reviews, scientific approach is an approach which makes students understand various materials. One of learning model supporting scientific approach is problem based learning. Problem based learning is an approach where students can solve their problem authentically which aims to construct their own knowledge and improve their inquiry, high order thinking skill, and self-confidence. Scientific approach through problem based learning will focus on three domains in learning process, namely affective, cognitive, and psychomotor, so that it will make students independent, active, creative, and innovative.

Topic: Vocational Education
DEVELOPMENT OF SUBJECT MATERIALS POWER DISTRIBUTION IN ACCORDANCE WITH KKNI IN THE DEPARTMENT OF ELECTRICAL ENGINEERING IN IMPROVING BASIC COMPETENCE OF ELECTRICAL ENGINEERING STUDENTS

D. Mulyana, A. Sutopo, Mustamam

Universitas Negeri Medan

Abstract

This study aims to compile the subject matter of Electric Power Distribution in accordance with the Indonesian National Qualification Framework (KKNI) with Basic Competency of Expertise (KDBK) of Electrical Energy Conversion in Electrical Engineering Education Study Program in an effort to improve the competence of electricity. Research method is done by research and development approach (R & D). Preliminary research activities include: (1) analyzing basic competencies in the field of electrical energetic conversion expertise in accordance with KKNI, (2) compiling topics and sub-topics of Electric Power Distribution materials, and (3) creating materials on Electric Power Distribution materials. The results of the analysis resulted in several learning topics as follows: (1) introduction of electric power system, (2) electricity distribution system, (3) electric power distribution system classification, (4) electrical power distribution system components and (5) electric power. In the second phase of the research will be validation and dissemination of teaching materials.

Topic: Vocational Education
HINDRANCE FACTORS OF STUDENT THESIS COMPLETION ON ELECTRICAL ENGINEERING EDUCATION AT FT UNIMED

Muhammad Amin
Universitas Negeri Medan

Abstract

The main purpose of this study was to find the factors that hampered the progress of completion of student thesis. The research method used descriptive approach. The factors to be analyzed are: (1) quality of service (covering the quality of administrative services and the quality of thesis supervision services); (2) support of research subjects; (3) student ability on scientific article writing; (4) peer environmental support; and (5) searchability and availability of resources. The factors analyzed as a whole are expected to assist students in completion of the thesis, so that the length of the study can be shortened. The results showed that the factors that are still a barrier to the completion of student thesis include: (1) the existence of weaknesses in the field of administrative services, (2) low quality of guidance service to students, (3) lack of support of research methodology, (4) low ability of students in writing scientific articles, and (5) low ability of students in tracing relevant sources.

Topic: Vocational Education
EFFECT OF THE IMPLEMENTATION OF 6 COURSE TASKS TO LEARNING BEHAVIOR OF UNIMED STUDENTS
(A STUDY IN PTB PROGRAM STUDY OF FT UNIMED)

Zulkifli Matondang, Asri Lubis, Nono Sebayang
Prodi Pendidikan Teknik Bangunan FT Unimed

Abstract

The purpose of this research is to observe the implementation of 6 course tasks and its effect to students’ learning behavior. Learning process is a process in which students’ behavior changes in cognitive, affective, and psychomotoric aspect. The 6 course tasks: Daily Tasks, Critical Book Report, Journal Review, Idea Engineering, Mini Research, and Project are given to change students’ learning behavior. The 6 course task is one of the way to embody Unimed motto “character building university”. The learning behaviors observed in this research are: communication ethics, honesty, responsibility, cooperation, and creativity. The research was done in odd semester of academic year 2017/2018. The population of this research is all students of PTB program study, which the sample are each class’ representative. The data was obtained using observation and analyzed using correlation descriptive analysis. The research findings are: most students are given the 6 course tasks by the professor for each course, students have learning source to do the 6 course tasks, the scoring rubric and submission date of the 6 tasks are clear enough, and there is a significant contribution to students’ learning behavior.

Topic: Vocational Education
FOOD CONSUMPTION ANALYSIS AND ENERGY ADEQUACY LEVEL STUDENTS UNIVERSITAS NEGERI MEDAN

Esi Emilia¹, Juliarti dan Nikmat Akmal²

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Abstract

Food consumption is the amount of food consumed by a person or group of people. The lack of nutrients needed by the body depends on the amount of food consumed. Students who are classified as late adolescents are vulnerable age of nutrition because at this time there is rapid growth and high activity to follow the lecture. Adequate nutritional intake is needed to meet the needs and daily activities. If the pattern of poor intake, will have an impact on growth and development that is not optimal, can not carry out the lecture well and more susceptible to chronic diseases in adulthood. Food snacks during the campus contribute to the fulfillment of nutritional needs of students. The purpose of this study is to determine the consumption of snack foods students, knowing the contribution of food snacks to meet the nutritional needs of students. The location of the research is the campus of Medan State University, held in July-November 2017. The sample size is 196 people. Data retrieval technique was done with the help of questionnaire. Data on food consumption and consumption of snack foods were collected using 3 x 24 hour recall method. Data on food consumption, consumption of snack foods and the level of adequacy processed using the program Food Programmer. Most of the samples eat 2 times a day and snack 2-3 times a day. The most common source of carbohydrate is rice, a protein source is a marine fish, mostly eating vegetables less than a serving a day and rarely eating fruit. The average energy intake from carbohydrate, protein and fat sources amounted to 1680.04 calories with a sufficiency rate of 73.7%. Thus the sample energy adequacy level is at a moderate level (70-79%)

Topic: Vocational Education
INFLUENCE OF ECONOMIC STUDY BILINGUALLY AND IMPLEMENTATION OF SELF REGULATION FOR STUDY RESULT OF STUDENT CLASS X YAYASAN PENDIDIKAN SHAFIYYATUL AMALIYYAH MEDAN

Desi Marisanty Pardede
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Abstract

This study aimed to know Influence of Economic Study Bilingually and Implementation of Self Regulation for Study Result of Student Class X Yayasan Pendidikan Shafiyyatul Amaliyyah. The population all of student class X Yayasan Pendidikan Shafiyyatul Amaliyyah Medan 4 classes with totally 112 and sample was 28 people. Random Sample technique. Data analysis technique was used to multiple regression analysis. After measured totally item valid 17 item and represented two independent variable. Reliability test used Alpha Cronbach with result rhitung>rtabel (0,414>0,372<0,466 for first and second independent variable) and homogeneous data. Result multiple regression analysis ry (1,2) 0,266, the hypothesis had influence economic study bilingually and implementation of self regulation for study result student class X YPSA. Result from Ftest showed that economic study bilingually and self regulation was significant with value Fhitung 6,18 and significant value 6,18>3,72. The conclusion had influence economic study bilingually and implementation of self regulation for result study student class X Yayasan Pendidikan Shafiyyatul Amaliyyah Medan.

Topic: Vocational Education
DEVELOPMENT OF FAMILY WELFARE EDUCATION VOCATIONAL STUDY PROGRAM

FACULTY OF ENGINEERING OF

STATE UNIVERSITY OF MEDAN

Dina Ampera, Flora Hutapea, Farihah

Universitas Negeri Medan

Abstract

The development of the Vocational Family Welfare Education (Vocational PKK) Study program has the mission of becoming a superior and competitive Study Program in the field of Vocational Education which has a national quality standard. The vision is consistent with the vision of the faculty and the University. To realize the vision, Vocational PKK has objectives, which are 1) to conduct education and learning and training, 2) to conduct research and community service, 3) to cooperate with business and industry and other stakeholders, 4) to develop entrepreneurship culture in Vocational PKK through partnership with business and industry. The achievement of vision and the implementation of mission is expected to realize the goal of producing graduates who have the insight of faith to God, create innovative products through research for the development of science in vocational education, work in public service to improve the quality of study program, and industry and community life, producing graduates who have an entrepreneurial culture that encourages the ability to produce income generating programs by involving internal and external stakeholders.

In order to lead to an internally driven quality based culture, Vocational PKK Study Program implements an internal quality assurance system developed based on a university system that refers to BAN and SNP standards. Basically, quality assurance in the Study Program is conducted based on academic documents and quality documents, so that audits include system audits and compliance audits, used to encourage continuous quality improvement. Academic quality audits using manual procedures and work instructions have significantly encouraged improvements in the academic field, human resource management, finance, infrastructure and improved management information systems.

To achieve the objectives above, the Study Program implements a guidance system based on Unimed organization structure, credible leadership system, transparent, accountable, responsible and fair and management system which includes planning, organizing, staffing, leading, controlling in internal and external activities and involving the academic community in developing policies and programs. The realization of the vision and the implementation of the mission is determined by the suitability and adequacy of the policy, to be formulated as follows: (1) to improve coordination among lecturers and students, and to create dynamic academic atmosphere; (2) to conduct lecturer-based competency to improve lecturer's capacity and capability in order to design innovative strategies and learning models as well as improve the ability to research and write scientific publications.

Topic: Vocational Education
THE INSTRUCTIONAL MEDIA DEVELOPMENT OF DESIGN OF MACHINE ELEMENT CONCENTRATE TO METAL JOINT BASED ON INDONESIA NATIONAL QUALIFICATION FRAMEWORK

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Abstract

This study aims to develop a learning media based on Indonesia's national qualification framework in an effort to improve student's softskill. Specifically, this research aims to (1) find softskill in the design of machine element of metal grafting concentration through requirement analysis from various stakeholders, (2) to design instructional media that can improve softskill based on requirement analysis, and 3) Such learning on the design of the machine element of the metal grafting concentration for various constructions. This research uses development research method, conducted with procedure 1) requirement analysis, 2) design, and 3) design trial, through riviu expert, individual test, small group test, and field test. The subject of this research is a student of Mechanical Engineering Education Study Program which takes the course of design of machine element in odd semester of academic year 2017/2018. Data collection techniques used in this study are nontest techniques and. Nontest techniques used are questionnaires, interviews, and documentation. Test techniques used are performance test techniques (performance test). Data analysis techniques used are (1) descriptive analysis to describe data of requirement analysis and test result data, and (2) pretest post test to know effectiveness of instructional media being tested. The finding of study are: (1) the quality of instructional media viewed from the expert in educational technologies is good (75.00%), (2) in the one to one try out of the three student observation indicated that the product is good (75.46%), (3) in the small group try out of twelve students observations indicated that the product is good (87.04%), (4) and in the classroom group try out of twenty five students observations indicated that the product is good (mean pretest = 11.39; mean posttest = 42.54).

Topic: Vocational Education
THE DEVELOPMENT OF EMPLOYABILITY SKILLS’ D3 STUDENTS OF ENGINEERING FACULTY, STATE UNIVERSITY OF MEDAN

Sumarno, Suherman, Saut Purba

Engineering Faculty State University Of Medan

Abstract

The D3 graduate students of engineering faculty State University of Medan as the provider of the technical labour forces has faced quantitative and qualitative (employability skills) matching problems. One of the requisites that need to work in an industry is employability skills. The purpose of this research is to obtain a delineating of the development of employability skills’ D3 Engineering Faculty State University of Medan. The subjects of this research were the D3 students registered on 2017/2018 academic year (62 Students, consist of 23 students class 2017, 15 students class 2016, 13 students class 2015, and 11 students class 2014). Data collecting by using employability skills self inventory. Statistical analysis regarding to describe: (a) the differences of the employability skills each students class have used Anova, and (b) further analysis of the differences have used Manova, with k = 4 (technological skill, fundamental skill, personal management skill, and team work skill), significance level (α) = 5%. The research findings describe: (a) there was the differences of the employability skills each students class have used, (b) technological skill of students class 2017 is significant lower than students class 2014 on α = 5%; fundamental skill of students class 2017 is significant lower than students class 2016 and 2015 on α = 10%; (c) personal management skill and team work skill are not different all students class.

The research findings show that personal management skill and team work skills are affected by many factors, not only instructional program in campus but also activities in students environments.

Topic: Vocational Education
BLENDED LEARNING MODEL CULTURE RAHAH KARAKTER
IN THE PROGRAM OF THE STUDY OF PRELIMINARY FACULTY OF ENGINEERING STATE UNIVERSITY MEDAN
Desy Afianty Lubis, Rohana Aritonang, Dian Maya Sari
ABSTRACT
This research is an R & D research with the purpose to know the effectiveness of learning model Blended Learning on Makeup Character of Education Students of State University of Medan and to know the learning result of Makeup of Character of student at Makeup character of student of Makeup Education, State University of Medan. This research was raised because of the problems that arise due to unbalanced mastery of the competence of theory and practice in the students, in addition to the constraints in the learning process, such as the very limited material existence, the student activity is still low in following learning, teaching aids that are not maximally utilized, learning model used less precise. Learning is often done today still using the method of teacher center learning or still oriented to lecturers, with the utilization of instructional media that has not varied, the lecturer uses only simple media on the power point. Lecturer of the field of study states that the student has not been able to master the theory of Makeup Character Characteristically Makeup Character well so that the results of learning less satisfactory. Students often have difficulty in recognizing names and functions on cosmetics used in Makeup Character Face. Because if do make up character with inappropriate materials and cosmetics can lead to unsatisfactory results. Blended learning is focused on changing the form of classical learning so that students are more active in learning the material inside and outside the classroom, which is shown by the increasing of student competency. The purpose of using blended learning is to help students develop better in the learning process in accordance with learning styles and preferences in learning, as well as provide practical, realistic opportunities for lecturers and students to learn independently, benefit and improve, and increase student flexibility, by combining the best aspects of face-to-face and online learning. The data collected from product trial results is used as a basis for determining effectiveness, and appeal to products developed prior to use in the field. The results showed (1) effectiveness test on students with very good criteria (90.5%) and effectiveness test on lecturer with very good criteria (97%); (2) student learning outcomes increased (20.2%); This proves the effectiveness of the Blended Learning model that is developed so well that the students' learning outcomes on the character makeup lessons increases.

Topic: Vocational Education
THE DEVELOPMENT MODEL OF LABORATORY MANAGEMENT MAJORING IN ELECTRICAL ENGINEERING FACULTY OF ENGINEERING UNIVERSITAS NEGERI MEDAN

Salman Bintang
Universitas Negeri Medan

Abstract
This study aims to find the model of laboratory management majoring in Electrical Engineering Faculty of Engineering which is useful to improve the competence of lecturers and students in terms of teaching, research and testing. This model is built based on conditions, situations, facilities and infrastructure and human resources in the Department of Electrical Engineering. This research includes research development (research and developmental). This research approach using mixed method designs with concurrent triangulation designs or integrative design. Concurrent triangulation designs are intended to obtain simultaneous and integrated quantitative and qualitative data. Research subjects are students, lecturers, technicians, and laboratory managers with the facilities and infrastructure owned. Data obtained through observation, documentation, interviews, and questionnaires. Data analysis as a basis to build the model of laboratory management majoring in Electrical Engineering Faculty of Engineering by using Logical Framework Analysis (LFA). This research was conducted for three stages. The first stage is the stage to build the model by using Logical Framework Analysis (LFA). which is based on preliminary studies, needs analysis, expert consultation and research objectives. the second stage is a model-limited pilot phase on the pilot project. Trial results obtained by revision model. The third phase is an expanded trial involving public and private higher education to obtain a final model of the laboratory management model of Electrical Engineering Faculty of Engineering. Based on this final model will be dissemination unit model of laboratory management model of Electrical Engineering Faculty of Engineering to improve the competence ability to improve the competence of lecturers and students in teaching, research and testing.

Topic: Vocational Education
EFFECTIVENESS OF LABORATORY JOB SHEET FOR COURSE LECTURERS GROUP (KDBK) OF COSMETOLOGY EDUCATION PROGRAM OF STATE UNIVERSITY OF MEDAN

Lina Pangaribuan, Dian Maya Sari, Rohana Aritonang
Universitas Negeri Medan

Abstract

The achievement of the goal of Education Program is determined by these: (1). Improving the quality of the curriculum, improving the learning process, (2) Improving the quality of the assessment, (3) developing the human resources of lecturers and staff, (4) improving the infrastructure, as well as improving the academic atmosphere as an effort to improve the quality of the graduates and (5) developing students’ activity and also partnership network. In order to achieve these objectives, a series of strategies such as (1) reviewing the curriculum so that the competence of graduates is in line with the needs of external stakeholder, (2) integrating learning revolution in learning process as outlined in the lesson plan, (3) implementing e-learning based learning, (4) refunctionalizing the Field of Expertise Lecturers Group (KDBK), (5) improving the quality of lecture monitoring that empowers KDBK lecturers, (6) standardizing the assessment. In addition, the facilities and infrastructure of classrooms, laboratories, and learning devices are also improved.

The purpose of this study is to determine the validity and effectiveness of the laboratory job sheet and its effect on Cosmetology Education students. Lecturers are grouped into KDBKs according to their educational background and experience. Lecturers who are assigned to teach Cosmetics course are selected based on their competence according to KDBK. The activities are conducted based on self evaluation on the implementation of KKNI curriculum and its effect on student competence. There is a KDBK of hair and skin care in Cosmetology Education course and Basic Practice Support course has a need of job sheet. The result of the KDBK team review shows that there is a need to improve the use of cosmetology laboratory through the preparation of good job sheet, in order to maintain the relevancy of the lecture material with the development of stakeholder needs. Therefore the currency of job sheet in cosmetology laboratory is evaluated.

This research is a development research using Bord and Gold model. Subjects and objects of research is job sheet use in Cosmetics course in the cosmetology laboratory. Job sheet is a media, tool or material used as a channel of information and contains steps to complete a task that aims to facilitate students in understanding learning materials. Job sheet is used by students during practicums as supporting media. The purpose of preparing Job sheet is to enable students, help students to manage practicum materials, and develop students’ processing skills. The expected result of the study is that there is an effect of using worksheet in Cosmetics course in the cosmetology lab to students’ learning outcomes. Other expected outcomes are 1) the validity of the Job sheet as evidenced by the validation of media experts and material experts, 2) There is an increase in learning outcomes after using the worksheet.

Topic: Vocational Education
PATTERN IMPLEMENTATION COACHING PROFESSIONAL VOCATIONAL HIGH SCHOOLS SUPERINTENDENT

Arif Rahman, Adi Sutopo, Dadang Mulyana
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Abstract

The purpose of this research is to know the pattern implementation coaching Professional Vocational high schools Superintendent. The approach used in this research is research development. The research results showed that construction supervisors include coaching profession and career coaching. The coaching profession is directed to improving and developing professional capability in order to carry out the functions and pengawasa, both of academic or managerial oversight. Career coaching to increase the rank and position of its current status. Construction supervisor of vocational secondary schools conducted by the provincial education office in cooperation with the Association of Supervisors, functions and role of the Coordinator of the Working Group of Trustees, Superintendents and Superintendents Working Congress.

Keywords: Pattern, Professional Coaching, Supervisor

Topic: Vocational Education
STUDENT’S ASSIGNMENT ON KKNI CURRICULUM IMPLEMENTATION AT FAKULTAS TEKNIK UNIVERSITAS NEGERI MEDAN
Rosnelli

Pendidikan Teknik Elektro Fakultas Teknik Universitas Negeri Medan

Abstract

The aimed of study is to monitor and evaluate the tasks of students on the application of KKNI (Kerangka Kualifikasi Nasional Indonesia) curriculum in the Department of Electrical Engineering Education Faculty of Engineering, State University of Medan. The duties of the students are Routine Duties (TR), Critical Book Review (CBR), Tasks Ide (TRI), Mini Research (MR), Critical Journal Review (CJR), Project Work Tasks (TPW). Survey method used for information. The population is a student of Electrical Engineering Department which consists of Electrical Engineering Study Program, Electrical Engineering and Computer Technology Education. The sample is a student of Electrical Engineering Education. The results showed that 94.4% of lecturers in the Electrical Engineering Education Study Program applied KKNI curriculum held on 6 tasks in an effort to improve competence in terms of (1) Competent of logical and analytical thinking in solving problems; (2) Competents work independently and cooperate with others; (3) Competents communicate ideas and information both orally and in writing; (4) Competent improve science and independent business; (5) competence and use of technology; (6) Competent to evaluate, analyze data, and effective solution to solve the problem; (7) Competent plan and organize activities; and (8) Competent adapt to work environment and society.

Topic: Teaching And Learning
CURRICULUM STRUCTURE OF CIVIL ENGINEERING STUDY PROGRAM

Syafiatun Siregar

Abstract

The curriculum is all the experience that has been planned in a systematic and integrated way to prepare students to achieve educational goals both obtained from within and outside the institution. Management in curriculum planning can be interpreted as skill or ability to plan and organize curriculum. The purpose of this study is to review and document the curriculum structure of Civil Engineering S1 program that is in accordance with the Civil Engineering work market. The research is done by doing the step of curriculum making consist of four elements, that is learning achievement, study material that must be mastered, learning strategy to reach, and its achievement assessment system. The results achieved are the formation of propyl graduates of civil engineering studies program as a Researcher, Planner, Supervisor, Qualified Tester and Project Manager. In addition, there is a curriculum structure in accordance with the demands of the Civil Engineering job market.

Topic: Teaching And Learning
APPLICATION OF WORK-BASED LEARNING TO IMPROVE LEARNING OUTCOMES OF CERAMIC INSTALLATION PRACTICES

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Abstract
The practice of stone and concrete work is one of the existing courses in the third-semester Program Building Engineering, Faculty of Engineering in Unimed. The result of semester evaluation, the practical ability of student still low in concrete stone work practice class. While the competence/knowledge of stone and concrete work practices is very helpful for students when they plunge in general Praktik Kerja Lapangan Industri (PKLI) conducted in semester 5 and in particular when they enter the world of work. To achieve maximum results, it is necessary to do a more comprehensive learning with work-based learning (WBL). The purpose of this research is to measure students' competence in the installation of ceramics with work-based learning. The research method is done by direct observation conducted by the researcher and by the lecturer of the lecturer on the student activity level. The results of the research have an impact on the improvement of students' competence in the installation of ceramics with work-based learning. The improvement was also seen from the result of student learning done with pre-test and post-test.

Topic: Teaching And Learning
Abstract: The shear strength and compressive strength of the soil is one of the core materials of soil mechanics and soil mechanics courses that examine the internal resistance forces that work per unit of soil mass to withstand collapse or failure throughout the collapsed field in the soil period. It is necessary to know the basic knowledge, namely to know the strength of shear strength and compressive strength on clay. However, many students have not finished in studying it. Various efforts in improving the mastery of the material, one of them through practical methods designed by students can develop and improve learning activities in the understanding of the subject matter and basic skills to improve the experimental skills, especially using tools. The type of research used is experimental research and the method used is quantitative with pretest and postest control group research design. The instruments used are cognitive ability test, student observation sheet and lecturer and questionnaire. The result of the research shows that the students' cognitive improvement is 83.79% and the students psychomotor improvement with very good criteria is 57.68% and the average of the responses of students answer strongly agree on the application of practice-based learning on the subject of shear strength and compressive strength about 88%. So that the application of practicum-based learning can be used for various types of soil cases that exist especially for testing related to shear strength and compressive strength on clay.
COOPERATIVE LEARNING MODEL STAD(STUDENTTEAMS ACHIEVEMENTDIVISION) EFFECT ON THE RESULTS OF CONSTRUCTION PATTERN STUDENTS PRODI TATA BUSANA

Hotmaria Tampubolon, Surniati Chalid and Rosita Carolina

Faculty of Engineering, UNIMED

Abstract

This research aims to: to determine the effect of cooperative learning model STAD type on learning outcomes construction courses dressmaking patterns Force mahasiswa 2016/2017. The research was conducted at the Faculty of Engineering, State University of Medan. Subjects in this study consists of two classes: Class A as the control class, and class B as an experimental class. This research is kuosi experiment, consists of three stages, namely pre-test, treatment and post test. The research instrument was given at the control class and experimental class, in the form of an objective test with multiple choice. Requirements analysis is conducted to test the normality and homogeneity, while data analysis technique different test t-test. The results showed there are significant STAD cooperative learning model of the learning outcomes of the course construction dressmaking patterns Forces 2016/2017 student. It is seen from the test results obtained hypothesis where 

\[ t_{hitung} = 4,11 \]
\[ t_{tabel} = 2,01 \]

\[ t_{hitung} > t_{tabel} \]

\[ \alpha = 0.05 \text{ and } df = 48 \]

where.

Topic: Teaching And Learning
SEMESTER TEACHING AND LEARNING PLAN (RPS) DEVELOPMENT MODEL BASED ON CURRICULUM OF KKNI IN FASHION EDUCATION SECTION

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Abstract
This research aims to describe: (1) the availability of course learning media in the curriculum of Fashion Education Section, especially for Semester Teaching and Learning Plan (RPS), with the expected competence owned by fashion educational experts according to the National Qualification Framework of Indonesian (KKNI); (2) the suggestions of stakeholders related to learning media, in particular RPS, for the courses that exist in the Fashion Education Section; and (3) the stakeholder expectations related to learning media, especially RPS, for the courses offered by Fashion Education Section. This research is a development to complete the learning media. The subjects in this research are basic productive courses that will be prepared the guidebooks, and the objects are the basic productive courses in Fashion Education Section (Fashion Technology, Pattern Construction, Basic Art and Design).

This research was conducted in the Fashion Education Section, Department of PKK, which involves the lecturers of the course subjects (Fashion Technology, Pattern Construction, Basic Art and Design). In accordance with the development research procedure, the trials of the media are conducted in three times by experts group, lecturers group and students group. The class that be used for the trials is the 3rd semester students who have attended in the course. For the validation was done by the material experts and the design learning experts.

Based on the findings and discussion, it can be concluded that the Semester Teaching and Learning Plan (RPS) based on the National Qualification Framework of Indonesian (KKNI) in productive basic courses (Fashion Technology, Pattern Construction, Basic Art and Design) has been prepared by Fashion Education experts according to the expected learning achievement. It can be done according to the steps of product testing both of material experts and design experts.

Topic: Teaching And Learning
EFFECTIVENESS OF IMPLEMENTATION OF INTEGRATED EVALUATION MODEL AT THE DEPARTMENT OF BUILDING ENGINEERING EDUCATION STATE UNIVERSITY OF MEDAN

Sarwa, Irma N. Nasution, Syahreza Alvan

Abstract

The integration evaluation model with 6 stages is defined as a standard evaluation at Medan State University (UNIMED). Implementation of integration evaluation model 6 tasks has been running in last 3 semesters. This research was conducted to assess the effectiveness of the implementation of this model in the field of study in the Department of Building Construction Education (PTB). The research method is survey of lecturers who have taught in semesters 1 to 3. The purpose of this research is to know the lecturer’s definition of each task, task form and evaluation instrument. The results presented mapping of each task in a description of: 1) definition of each task, 2) task form, and evaluation instrument.

Topic: Teaching And Learning
COMBINING BLENDED LEARNING USING 3D HOLOGRAM TECHNOLOGY

1) Dian Noviandri, M. Fakhriza

1,2) State University of Padang

Abstract

Qualified lecturers and the process of delivering the same materials in teaching is needed, if Lecturers teach the same course continuously for 3 hours in different classes, then there will be problems that is not uniform material / material delivered at 1st hour in the first class, with the second class and so on. The approach used Luther multimedia development method, which consists of 6 stages, namely concept, design, collecting materials, assembly, testing, distribution, by combining blended learning that is adding the use of 3 Dimensional hologram. In this way the teaching materials are made / recorded in accordance with the Semester Learning Plan that has been predetermined, so that later lecturers can be replaced by using blended learning hologram, which comes from teaching material that has been recorded previously. The learning system is more sophisticated, the material delivered in accordance with the semester and standard learning plan in each class to create a futuristic learning.

Topic: Teaching And Learning
The purpose of this study is to develop learning tools that include syllabus, Semester Learning Design (RPS), Teaching Materials and Assessment for Computer Aided Manufacture (CAM) courses that have been tested accordingly. Needs analysis in the form of relating to the application of curriculum change of KBK to the KKNI-based curriculum necessarily requires adjustment in many respects. In its implementation the KBK curriculum uses the appropriate tools with the KBK curriculum. With the application of curriculum based on KKNI it is necessary to develop learning tools that support the application of KKNI curriculum. The development of this researcher uses a research procedure that adapts from the 4-D model. Based on the assessment of the material expert, it is shown that the RPS of the CAM and CAM course have met the criteria very suitable for CAM learning tools, then based on the students' assessment that the RPS CAM and CAM Study Materials have met the appropriate criteria to be used as CAM learning tools. The effectiveness of the learning device will be carried out in the second stage of the study and after all completed Dissemination will be carried out in the test of the effectiveness of the learning device.

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**Topic: Teaching And Learning**
THE DEVELOPMENT OF DIRECTED – PROJECT BASED LEARNING (DPjBL) TO IMPROVE STUDENTS’ LANGUAGE SKILLS

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Abstract

The 21st-century skills being highly promoted today are Creativity and Innovation, Critical Thinking and Problem Solving, Communication and Collaboration. Communication Skill is one of the essential skills that should be mastered by the students. To master Communication Skills, students must first master their Language Skills. Language Skills is one of the main supporting factors in improving Communication Skills of a person because by learning Language Skills students are considered capable of communicating well and correctly so that the message or how to deliver the message to the listener can be conveyed clearly and easily understood. However, it cannot be denied that English output or learning outcomes which are less optimal is the problem which is frequently found in the implementation of the learning process. This research aimed to improve students’ language skills by developing learning model in English subject for VIII graders of SMP N 1 Uram Jaya through Directed-Project Based Learning (DPjBL) implementation. This study is designed in Research and Development (R & D) using ADDIE model development. The researcher collected data through observation, questionnaire, interview, test, and documentation which were then analyzed qualitatively and quantitatively. The results showed that DPjBL is effective to use, it is seen from the difference in value between the pretest and posttest of the control class and the experimental class. From the results of a questionnaire filled in general, the students and teachers agreed to DPjBL learning model. This learning model can increase the students’ language skills.

Topic: Teaching And Learning
NEED ASSESSMENT OF THE DEVELOPMENT OF TRAINING MODEL OF ART OF MUSIC FOR SENIOR HIGH SCHOOL OF ART AND CULTURE TEACHERS

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Abstract

Research and development was motivated by problems with the educational background of teachers of art and culture which is only one field (art, drama, dance, music or visual arts), while according to the 2013 Curriculum, teachers are required to teach all four branches of the art and the low results of Teacher Competency Test (UKG) Arts and Culture in 2015, on average of 60. The purpose of the research and development of this model in general is to create a model of musical arts training for teachers of art and culture in order to improve the ability of SMK art and culture teachers in the art of music both in theory and practice. The specific objectives are: (1) measuring the level of validity, practicalities, and the effectiveness of the training model. The method used is the method of Research and Development with the procedure model of CEM (The Critical Events Model) with the steps are: (1) Identifying the needs of the organization; (2) Specifying job performance; (3) Identifying learner needs; (4) Determining objectives; (5) Building curriculum; (6) Selecting instructional strategies; (7) Obtaining instructional resources; and (8) Conducting training. The test is done with a number of participants, exactly 30 teachers. Instrument data collecting, among others: a) the assessment sheet instruments; b) the validation sheet; c) the observation sheet; d) questionnaire; and e) the test results of the training. The results of the feasibility assessment instruments conducted by experts / practitioners found that the instruments are eligible to be used. Based on data validity of the training model, it is obtained an average value of 4.00 and considered "valid" to book of model. Data of model practice training obtained an average of 3.88 and is categorized “valid”. Data effectiveness of the training model shows an average value of 3.47 is categorized "sufficient" for the ability to master teacher training materials. Training results showed that 78% of participants achieved a score of more than a minimum score, 70.

Topic: Teaching And Learning
THE ROLE OF GROUP SHARING MODEL IN CREATING AN EFFECTIVE AND FUN LEARNING

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Abstract

Students expect an attractive and fun learning to motivate and to help them understand the lesson. Teachers, as the ones who manage a learning activity, have designed group sharing model that can promote an interesting and engaging learning. This paper explores the issue regarding the role of group sharing learning model in promoting a fun and effective learning. The purpose of the current study is to describe the role of the learning model in achieving its targets. It can be inferred that the group sharing learning model is able to have the students engaged in the activity because the model allows them to be creative in developing their competence. Furthermore, this effective learning integrates the concepts from each member of a group based on the focus of the lesson.

Topic: Teaching And Learning
DISTANCE LEARNERS’ PERSPECTIVES ON SYNCHRONOUS LEARNING ENVIRONMENT BASED ON DEMOGRAPHIC CHARACTERISTICS AND ENROLLMENT FACTORS

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²Mechanical Engineering Faculty, State University of Medan, Indonesia

Abstract

The present study examined the differences of distance learners’ perspectives on synchronous e-learning environment based on their demographic characteristics, and the enrollment factors. The participants are 120 undergraduate students at Indonesian Open University in Taiwan. Participants completed a questionnaire that investigated their demographic characteristics, enrollment factors, and their perceptions on synchronous e-learning environment. Degree or education level, better occupation in the future, and work schedule are the top three enrollment factors. The results of statistics showed that students have positive perceptions on synchronous e-learning environment. There were significant different perceptions on synchronous e-learning environment when students are compared by gender and class level. However, there was no significant difference in students’ perceptions when students are compared by age.

Topic: Teaching And Learning
OBSTACLES FACED BY SUPERVISORS AND SOLUTIONS TAKEN SCHOOL SUPERVISOR IN IMPLEMENTATION OF ACADEMIC SUPERVISION OF SMK DISTRICT BATU BARA

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Abstract

This study aims to describe and analyze the problems faced by school supervisors and solutions taken by school supervisors in the implementation of academic supervision of SMK District Batu Bara. The subject of this research is the school supervisor in Batu Bara Regency. This research uses qualitative approach with descriptive design. Subject of research, researcher use technique of non probability sampling type purposive sampling. Techniques Data analysis using qualitative analysis that refers to the theory of Miles and Huberman. Data collection techniques are done through observation, documentation and in-depth interviews. The findings in this study are the obstacles and supporting factors in the implementation of academic supervision. These obstacles include: 1) background of different field of supervisory study of teachers, 2) communication of school supervisors and teachers that have not been well developed, and 3) the complexity of duties and responsibilities of school supervisors provided by the Education Office of North Sumatra. While the supporting factor is the formation of Working Group of School Supervisor (KKPS) which is a container to overcome various problems that dihadapi by school supervisor in doing academic supervision. In addition, the high motivation and expectation of teachers will be guidance and guidance given by school supervisors as well as other factors that can support the implementation of academic supervision at Vocational High School.

Topic: Teaching And Learning
THE IMPLEMENTATION OF THE DIRECT LEARNING MODULE-TOOLS IN ACHIEVING COMPETENCY TO FASHION TECHNOLOGY STUDY PROGRAM: TATA BUSANA

Rasita Purba, Flora Hutapea dan Nurhayati, Tj.

Fakultas Teknik, Universitas Negeri Medan

Abstract

The objective of this study are: (1) to see the implementation of a direct learning module-tools how to achieve competency with a technique provide variously seams to clothes of student Pendidikan Tata Busana. (2) to know gaining competency technique provide variously seams on clothes of students Pendidikan Tata Busana. This study was done on Faculty of Engineering State University of Medan. The respondent to this study comprised student in Semester 3 Group A involved 35 students. This study is a class-room action research. This research consist of pre-test and post-test stages, done in two cycles. This study is a learning module-tools with topic provide various seams on clothes. The results indicated (1) Applied Direct Learning Model with Module-tools can improve their performance under the subject Technology of Clothes, (2) refers to the pre-test provided in students obtained average score 69.77 and implementing post-test I cycle I obtained average score 76.25. It is noted 24 students (68%) had not achieved any improvement yet. (3) by the result of implementing Post-test II (cycle II) obtained average rate 83.4. It was noted 89% had achieved improvement of learning and another 11% had not achieved any improvement. In correlated to the result as above, it is suggested such as (1) those lecturer Subject of Basic Productive specifically technology of fashion to apply variety model of learning refers to the material of learning, interested and encouraged those students to study for allowing atmosphere and effective learning-studying and (2) it is hoped the students to take part actively in learning-studying process, in order to improve their performance.

Topic: Teaching and Learning
DEVELOPMENT OF BLENDED LEARNING LEARNING MODEL BASED CONSTRUCTIVISTIC APPROACH CNC MACHINING ENGINEERING COURSES

Muslim

Jurusan Teknik Mesin Fakultas Teknik Universitas Negeri Medan

Abstract

Research This development aims to produce a blended learning learning model, which is a learning model that combines between face-to-face learning with online learning learning based on constructivist approaches for CNC machining engineering courses. Specific objective is through this study obtained by learning model of blended learning-based approach constructivist in the form of online learning program which is equipped with lecture plan (syllabus and RPP), teaching materials and evaluation system for CNC machining machining course in both print and digital form. that is valid, practical and effective in CNC machining engineering courses. This research uses Research and Development (R & D) with Instructional Development Institute (IDI) model with stages of designing, development, and evaluation. Posttest-Only Control Design experimental method. This research was conducted at the Department of Mechanical Engineering Faculty of Engineering, State University of Medan with 58 respondents consisting of two research classes that have been tested homogeneity at the beginning before treatment. This development research uses t-test data analysis. Data were collected through questionnaires and test methods. The findings of the study suggest that the blended learning model based on constructivist approach in the category is valid, practical, and effective. The implication of this research is that learning model of blended learning based on constructivist approach of students is easier to understand the material, and can improve learning outcomes in the eyes of CNC machining machining subjects.

Topic: Teaching And Learning
Abstract

This study aims to obtain the lecturer needs figure out in the Department of Mechanical Engineering Education FT Unimed by using a descriptive research design. Subject in this research is the Department of Mechanical Engineering Education FT Unimed while the object is all the Lecturer in Mechanical Engineering FT Unimed that classified in Kelompok Dosen Bidang Keahlian (KDBK). The data was collected by document recording techniques, observation and interview and were analyzed using descriptive analysis. The results showed that in 2017, Department of Mechanical Engineering Education Unimed FT required (1) 1(one) Lecture to support KDBK of Design and Construction; (2) 3 (three) Lectures to support KDBK machine, (3) 2 (two) Lectures to support KDBK of Metal Fabrication, (4) Lectures to support KDBK Design & Construction, 2 (two) Lectures to support KDBK of Basic Science / general, (5) 1 (one) Lecture to support KDBK of Control System, and (6) 1 (one) Lecture to support KDBK of Automotive.

Topic: Teaching And Learning
BLOG DEVELOPMENT AS A CLASSROOM

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Abstract

The use of blogs as classroom lectures will greatly assist the students in studying and understanding the lecture material without being limited space and time. This study aims to: (1) develop IT-based learning tools in the form of content, teaching materials and instructional media, and (2) developing Blog as an online lecture space. This research is a development research. The development of a blog as a lecture room and learning tools based on IT content, teaching materials and learning media. Learning tools that will be developed are in the basic course-Design and Environmental Engineering. The course position in the curriculum of KKNI Prodi PTB is the main course and must be weighted 2 credits. The study is located at the Department of Technical Education Building Faculty of Engineering UNIMED held in June - November 2017. Data were analyzed using descriptive statistics. Result of learning device development in the form of lecture material in the form of handout, mini study guide, device evaluation. Learning media in the form of learning videos about the flood and its solution and powerpoint 8 times meeting. The resulting learning tools are published to web 2.0. The results of trials on blog usage targets show that in general the blogs developed already meet the feasibility based on aspects of learning content, blogging organization, desan and display, navigation and programming, and links. The conclusion of the results has been obtained that the development of learning tools contribute to the quality of blogs as classrooms and blogs as a classroom to help students in understanding the material without being limited space and time.

Topic: Teaching And Learning
HEADMASTER IN THE FRAMEWORK OF TEACHER PROFESSIONALISM PROFESSIONAL

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Abstract

This study aims to describe: (1) the role of principal as a supervisor, and (2) techniques used in instructional supervision. This research uses qualitative approach with multisitus research design. Data were collected using in-depth interview techniques, observation and documentation. There are two data analyzes including individual case data and whole case data analysis. The findings obtained (1) the role of the principal as a supervisor increases the overall success of school learning programs by helping teachers solve problems in the classroom; (2) supervisory techniques carried out by the principal are class visits, private meetings, regular meetings, inter-school visits, meet in groups, job training and upgrading.

Topic: Teaching And Learning
INFLUENCE OF ECONOMIC STUDY BILINGUALLY AND IMPLEMENTATION OF SELF REGULATION FOR STUDY RESULT OF STUDENT CLASS X YAYASAN PENDIDIKAN SHAFIYYATUL AMALIYYAH MEDAN

Desi Marisanty Pardede
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Abstract

This study aimed to know Influence of Economic Study Bilingually and Implementation of Self Regulation for Study Result of Student Class X Yayasan Pendidikan Shafiyyatul Amaliyyah. The population all of student class X Yayasan Pendidikan Shafiyyatul Amaliyyah Medan 4 classes with totally 112 and sample was 28 people. Random Sample technique. Data analysis technique was used to multiple regression analysis. After measured totally item valid 17 item and represented two independent variable. Reliability test used Alpha Cronbach with result rhitung>rtabel (0,414>0,372<0,466 for first and second independent variable) and homogeneous data. Result multiple regression analysis ry (1,2) 0,266, the hypothesis had influence economic study bilingually and implementation of self regulation for study result student class X YPSA. Result from Ftest showed that economic study bilingually and self regulation was significant with value Fhitung 6,18 and significant value 6,18>3,72. The conclusion had influence economic study bilingually and implementation of self regulation for result study student class X Yayasan Pendidikan Shafiyyatul Amaliyyah Medan.

Topic: Teaching And Learning
BLENDED LEARNING MODEL CULTURE RAHAH KARAKTER
IN THE PROGRAM OF THE STUDY OF PRELIMINARY FACULTY OF ENGINEERING STATE UNIVERSITY MEDAN
Desy Afianty Lubis, Rohana Aritonang, Dian Maya Sari

ABSTRACT

This research is an R & D research with the purpose to know the effectiveness of learning model Blended Learning on Makeup Character of Education Students of State University of Medan and to know the learning result of Makeup of Character of student at Makeup character of student of Makeup Education, State University of Medan.

This research was raised because of the problems that arise due to unbalanced mastery of the competence of theory and practice in the students, in addition to the constraints in the learning process, such as the very limited material existence, the student activity is still low in following learning, teaching aids that are not maximally utilized, learning model used less precise. Learning is often done today still using the method of teacher center learning or still oriented to lecturers, with the utilization of instructional media that has not varied, the lecturer uses only simple media on the power point.

Lecturer of the field of study states that the student has not been able to master the theory of Makeup Character Characteristically Makeup Character well so that the results of learning less satisfactory. Students often have difficulty in recognizing names and functions on cosmetics used in Makeup Character Face. Because if do make up character with inappropriate materials and cosmetics can lead to unsatisfactory results. Blended learning is focused on changing the form of classical learning so that students are more active in learning the material inside and outside the classroom, which is shown by the increasing of student competency. The purpose of using blended learning is to help students develop better in the learning process in accordance with learning styles and preferences in learning, as well as provide practical, realistic opportunities for lecturers and students to learn independently, benefit and improve, and increase student flexibility, by combining the best aspects of face-to-face and online learning.

The data collected from product trial results is used as a basis for determining effectiveness, and appeal to products developed prior to use in the field. The results showed (1) effectiveness test on students with very good criteria (90.5%) and effectiveness test on lecturer with very good criteria (97%); (2) student learning outcomes increased (20.2%); This proves the effectiveness of the Blended Learning model that is developed so well that the students' learning outcomes on the character makeup lessons increases.

Topic: Teaching And Learning
LABORATORY MANAGEMENT DEVELOPMENT MODEL IN DEPARTMENT ELECTRONIC ENGINEERING FACULTY OF ENGINEERING STATE UNIVERSITY MEDAN

Salman Bintang
Universitas Negeri Medan

Abstract
This study aims to find the model of laboratory management majoring in Electrical Engineering Faculty of Engineering which is useful to improve the competence of lecturers and students in terms of teaching, research and testing. This model is built based on conditions, situations, facilities and infrastructure and human resources in the Department of Electrical Engineering. This research includes research development (research and developmental). This research approach using mixed method designs with concurrent triangulation designs or integrative design. Concurrent triangulation designs are intended to obtain simultaneous and integrated quantitative and qualitative data. Research subjects are students, lecturers, technicians, and laboratory managers with the facilities and infrastructure owned. Data obtained through observation, documentation, interviews, and questionnaires. Data analysis as a basis to build the model of laboratory management majoring in Electrical Engineering Faculty of Engineering by using Logical Framework Analysis (LFA). This research was conducted for three stages. The first stage is the stage to build the model by using Logical Framework Analysis (LFA). which is based on preliminary studies, needs analysis, expert consultation and research objectives. the second stage is a model-limited pilot phase on the pilot project. Trial results obtained by revision model. The third phase is an expanded trial involving public and private higher education to obtain a final model of the laboratory management model of Electrical Engineering Faculty of Engineering. Based on this final model will be dissemination unit model of laboratory management model of Electrical Engineering Faculty of Engineering to improve the competence ability to improve the competence of lecturers and students in teaching, research and testing.

Topic: Teaching And Learning
THE IMPLEMENTATION OF THE DIRECT LEARNING MODULE-TOOLS IN ACHIEVING COMPETENCY TO FASHION TECHNOLOGY STUDY PROGRAM: TATA BUSANA

Rasita Purba, Flora Hutapea dan Nurhayati, Tj.

Fakultas Teknik, Universitas Negeri Medan

Abstract

The objective of this study are: (1) to see the implementation of a direct learning module-tools how to achieve a competency with a technique provide variously seams to clothes of student Pendidikan Tata Busana. (2) to know gaining competency technique provide variously seams on clothes of students Pendidikan Tata Busana. This study was done on Faculty of Engineering State University of Medan. The respondent to this study comprised student in Semester 3, Group A involved 35 students. This study is a class-room action research. This research consist of pre-test and post-test stages, done in two cycles. This study is a learning module-tools with topic provide various seams on clothes. The results indicated (1) Applied Direct Learning Model with Module-tools can improve their performance under the subject Technology of Clothes, (2) refers to the pre-test provided in students obtained average score 69.77 and implementing post-test I cycle I obtained average score 76.25. It is noted 24 students (68%) had not achieved any improvement yet. (3) by the result of implementing Post-test II (cycle II) obtained average rate 83.4. It was noted 89% had achieved improvement of learning and another 11% had not achieved any improvement. In correlated to the result as above, it is suggested such as (1) those lecturer Subject of Basic Productive specifically technology of fashion to apply variety model of learning refers to the material of learning, interested and encouraged those students to study for allowing atmosphere and effective learning-studying and (2) it is hoped the students to take part actively in learning-studying process, in order to improve their performance.

Topic: Teaching and Learning
INTERACTIVE MULTIMEDIA DEVELOPMENT BASED ON DRILL AND PRACTICE ON LEARNING MUSICAL TOOLS MELODIC PIANIKA CLASS IV IN SD METHODIST BINJAI

Eirene Juliani Br Mangunsong

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Abstract

The purpose of this research are: (1) Generate interactive multimedia that is suitable to be used and can help improve the quality of learning. (2) To know the effectiveness of interactive multimedia in improving the learning result of musical instrument of melodic pianika. This type of research is Research and Development (R & D) by using Borg and Gall development model through scarce steps: a) determining research potential and problem, b) gathering information, c) product design, d) design validation, e) revision design, f) product trial, g) product revision, h) trial usage, i) product revision, j) mass production. The result of the research showed: (1) validation of material expert consisted of 2 people, 83% with good category, (2) validation of instructional design expert consist of 2 persons, 87% with very good category, (3) validation of instructional media expert consist of 2 people are 84% with good category. (4) the small group trial is at 87% excellent qualification, (6) the field trials are in 81% excellent qualification. (7) The final product of the development of interactive multimedia is continued on the effectiveness test. Research conducted at SD Methodist Binjai. The sample consisting of experiment class that is 36 students treated using with interactive multimedia and control class that is 34 students treated with printed book media. (8) The results of hypothesis testing proves that there is a significant difference between the learning outcomes of students who use interactive multimedia with student learning outcomes that use print media. This was indicated by the results of Ti > Tt (9,77 > 2,00).

Keyword: interactive multimedia, learning musical

Topic: ICT and Educations
MODEL FUZZY K-NEAREST NEIGHBOR WITH LOCAL MEAN TO IMPROVE CLASSIFICATION RESULT

Hafizh Al Kautsar Aidilof, Muhammad Zarlis, Syahril Efendi

Universitas Sumatera Utara

Abstract

K-Nearest Neighbor is one of the top 10 algorithm in data mining (Wu, 2009). Based on its development, K-Nearest Neighbor is combined with Fuzzys approach. Fuzzy K-Nearest Neighbor located as membership degrees - except euclidean distance - as a feature of the data attachment to the target class so that Fuzzy KNN is known to improve the classification results. Except for adding Fuzzy, K-Nearest Neighbor is also modified at the class determination stage with Local Mean rules. At Local Mean KNN, the value of the data vectors test were calculated in each target class so that the euclidian distance was not calculated between the data but it was also between the target classes. In this study, we divide the local mean vector of LMKNN by the degree of membership for each class produced by Fuzzy K-Nearest Neighbor to obtain a smaller value vector. This will affect the more obvious range of values of the trend of a data to a class than other class. The test was performed using Iris dataset with k taken as many as 3 nearest neighbors in each target class. Accuracy results obtained with data testing in each class are 93.3%, 86.6% and 100%, so the overall average is 93.3%

Keyword: interactive multimedia, learning musical

Topic: ICT and Educations
RANDOMIZATION OF QUIZ USING MULTIPLICATIVE RANDOM NUMBER GENERATION AND RESHUFFLE TECHNIQUE ON STRENGTHENING WEB-BASED LEARNING

FACULTY OF ENGINEERING STATE UNIVERSITY OF MEDAN

Sukirno, Eka Daryanto, Rosneli, Fahmy Syahputra

State University of Medan

Abstract

Quiz is an indispensable part of e-learning concept. With the existence of the quiz then the teacher can measure the success rate of students in understanding the learning given. This is very important in the process of strengthening web-based learning that uses the concept of e-learning. Multiplicative random number generator is used in the question bank that has been created for the occurrence of differences between students' problems with one student to another so that distributed to students no matter the same. To avoid periodic repeats, a reshuffle technique is used to examine and replace the problem in case of periodic iteration that becomes natural in the generation of random numbers.


Topic: ICT and Educations
MULTIMEDIA-BASED SYSTEM OF MANAGEMENT INFORMATION FOR PERFORMANCE ENHANCEMENT OF EDUCATION LABORATORY

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Abstract

This research was conducted on the basis concerns about the low performance of laboratories in vocational schools to support practical learning process. The low performance of this laboratory has a negative impact on the low learning students’ outcomes. Multimedia-based information was developed due to the basic reason system in accordance with the specific needs of the users. This system was built using System Development Life Cycle (SDLC) method. Software testing is applied with Stub Testing, Unit Testing and Integration Testing. The feasibility test result of the program by five experts of Information System states that either the feasibility system or the content is very good, while the reporting system and ease of use is quite good. The implementation of software performed in 15 Vocational High School laboratories in North Sumatra Province, Indonesia. The use of information system is able to improve laboratory performance compared to the baseline, ie 6.41 on the aspect of time efficiency, 1.36 on the aspects of accuracy, 4.86 on the aspect of productivity, and 1.58 on the security aspect. The result of this study recommends the use of this information system to improve laboratory performance and to support the practicum teaching process for the quality improvement of vocational school education.


Topic: ICT and Educations
DEVELOPMENT OF LEARNING MEDIA BASED ON VIDEO IN CNC VMC-100 IN DIII MECHANICAL ENGINEERING, STATE UNIVERSITY OF MEDAN IN ACADEMIC YEAR 2017/2018

Sahala Siallagan\textsuperscript{1)}, Robert Silaban\textsuperscript{2)}, Hidir Efendi\textsuperscript{3)}

\textsuperscript{1,2,3)}State University of Medan

Abstract

CNC (computer numerically controlled) is one of subjects in Mechanical Engineering Department, Faculty of Engineering, State University of Medan. Most material of the subject is delivered by using text book. Hence, the study investigates that the instruction based on multimedia. The objectives of this research are: 1) to develop a video learning media to manage continental soup in CNC VMC-100 subject, 2) to investigate the compatible of the learning video in CNC VMC-100 subject. The research design is research and development by using three steps, such as: a. Planning. Determining of needs and objectives, collecting of resources and generating idea. b. Design. Making af flowchart, storyboard and preparing script. c. Development. Producing of video and audio, programming of material, preparing of support components, evaluating and revising.

\textit{Keyword: System Development Life Cycle, vocational school education.}

Topic: ICT and Educations
3 (Three) CRITERIA FUZZY WEIGHTED PRODUCT METHOD TO DEVELOP DECISION SUPPORT SYSTEM OF STUDENTS SCHOLARSHIP IN THE UNIVERSITY

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Universitas Sari Mutiara Indonesia Medan

Abstract

The purpose of the research was to develop a decision support system application to help user to determine the right candidate for the student scholarship. The current application that the institute uses is Spreadsheet. The user must conduct three times query to select the right candidates. The new system that we are going to build will process the data faster than the previous one. The user doesn’t need to do many queries to find the right candidates. Starting from analyze the current system and the data, design and build the system, testing implementation, we use waterfall model for software development. During the analyze phase to study the data from the spreadsheet, we found out that the 3 (three) criteria as the conditions from the candidates to fulfill the requirements, such as: Parent’s monthly income, Parent’s dependants, and GPA. Here, we made decision to use Fuzzy MADM method-Weighted Product, as a method to combine the value of each criteria degree. The values degree from 3 (three) criteria are calculated and the result will meet the maximum value which is close to value 1 (one). The table is stored in SQL Server 2008, and the system is built in Visual Studio 2010. The calculation of the values from the table is done by Visual Studio 2010 program. We made some menu to input students’ data, criteria, and values. The system was built so that the user can add or reduce the number of degree in each criteria (C1, C2, C3). Therefore, the system is more flexible due to the condition of the data in the future. Application has some menu on the display to help the user works more organize. We hope that this decision support system application can be used widely in institutions which are interested in offering students scholarship. The fact is that there are lots of students from economically challenge areas in the country which most of the parents work as a farmers or labor workers with low monthly income need support to continue their study. This decision support system application can also be applied not just in university but also in secondary level.

Keyword: criteria fuzzy weighted, decision support system

Topic: ICT and Educations
LEARNING USING 3D HOLOGRAM TECHNOLOGY COMBINING BLENDED

1) Dian Noviandri, M. Fakhriza
2) State University of Padang

Abstract

Qualified lecturers and the process of delivering the same materials in teaching is needed, if Lecturers teach the same course continuously for 3 hours in different classes, then there will be problems that is not uniform material / material delivered at 1st hour in the first class, with the second class and so on. The approach used Luther multimedia development method, which consists of 6 stages, namely concept, design, collecting materials, assembly, testing, distribution, by combining blended learning that is adding the use of 3 Dimensional hologram. In this way the teaching materials are made / recorded in accordance with the Semester Learning Plan that has been predetermined, so that later lecturers can be replaced by using blended learning hologram, which comes from teaching material that has been recorded previously. The learning system is more sophisticated, the material delivered in accordance with the semester and standard learning plan in each class to create a futuristic learning.

Keyword: learning, 3d hologram technology, combining blended

Topic: ICT and Educations
INTERACTIVE LEARNING MEDIA DEVELOPMENT WITH EDMODO APPLICATION ON COURSES DRAWING TECHNIQUES.

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Abstract
Research This development aims to produce a valid learning media, practical and effective on the Technical Drawing Course. This type of research is a development research using IDI product development model combined with Dick and Carey learning development model with stages of designing, developing, and evaluating. Posttest-Only Control Design experimental method. This research was conducted at the Department of Mechanical Engineering Student of Mechanical Engineering Faculty of Engineering State University of Medan with 58 respondents consisting of two research classes that have been tested homogeneity at the beginning before treatment. This development research uses t-test data analysis. Data were collected through questionnaires and test methods. The research findings stated that Interactive Learning Media With Edmodo Applications In Course Drawing Techniques in categories valid, practical, and effective. Implications of research that with Interactive Learning Media Denagn Application Edmodo In Engineering Drawing Courses Students more easily understand the material, and can improve learning outcomes in the Engineering Drawing Course.

Keywords: Interactive Media Drawing Technique, Edmodo

Topic: ICT and Educations