RISTEK-BRIN

iCONVET

International Conference on Vocational Education & Technology

The 3rd International Conference on Vocational and Technology

"Future of TVET Graduates"

CONFERENCE BOOK

Organizer :

Faculty of Engineering and Vocational
Universitas Pendidikan Ganesha

Website :
https://conference.undiksha.ac.id/iconvet/

Virtual Conference Format
Universitas Pendidikan Ganesha,
Bali-Indonesia
November 7th 2020

THE CHAIR'S SPEECH

THE 3rd INTERNATIONAL CONFERENCE ON VOCATIONAL AND TECHNOLOGY

November 7th 2020

Om Swastiastu, Assalamualaikum Warahmatullahi Wabarakatuh, Namo Buddhaya, Shalom. May peace be with us all.

First of all, let us send our profound gratitude upon Ida Sang Hyang Widhi Wasa, the Almighty God, for His blessings of the opportunity to have this international conference. As the chair of the committee, I feel honored and delighted to welcome you all in the 3rd International Conference on Vocational and Technology (IConVET) which has a theme: "Future of TVET Graduates: Developing Talent for Industry 4.0 and The New Normal".

This conference is an international forum organized by the Faculty of Engineering and Vocational, Universitas Pendidikan Ganesha to bring together academics, researchers, and professionals to present their ideas, experiences, and research in a scientific event. It brings together state of the art research in vocational education and technology. To support the Indonesian government's efforts in preventing the spread of the Covid-19 virus, this year IConVET is being held in a new format with the concept of virtual conference. Virtual conferences are held without reducing the benefits of this internasional event and hope that all of us will always be given health.

Distinguished guests, Ladies and Gentlemen,

This 3rd International Conference on Vocational and Technology is attended by participants from more than 40 different university and institute, who represent four different countries, namely Indonesia, Taiwan, Iraq, and Netherlands. We received 105 submission of full papers and through a quite tough review process, the

conference finally accepted 86 papers for presentation. Therefore, on behalf of the committee and the Research Institute of Universitas Pendidikan Ganesha, let us extend our greatest appreciation to all of you who have supported us and contributed your manuscripts to our conference, as well as to the panel of reviewers who have helped us in the selection process.

Ladies and Gentlemen,

in our beloved international conference, we are proudly address that we have 3 honorable keynote speakers: Prof. Dr. Thomas Kohler from Dresden University of Technology, Germany, Prof. Dr. Drs. Putu Sudira, MP. from Universitas Negeri Yogyakarta, Indonesia, and Ferry Jie, Ph.D. from Edith Cowan University, Australia. On this blessed occasion, let us express our heart-felt thanks and appreciation for all of our keynote speakers and panelists.

Ladies and Gentlemen,

This conference would not be possible if there were no encouragement and support with its various forms from many parties. Therefore, let us acknowledge, first, the Ministry of Education and Culture also the Ministry of Research and Technology/National Research and Innovation Agency, for the supports that have been given to our University in Indonesia through its research funding so that our researchers could conduct their research. Second, the Rector of Universitas Pendidikan Ganesha for his endless commitment and encouragement to the organizing committee so that we can make this event a reality. The local government of Bali and Buleleng Regency for their commitment to maintain sustainable cooperation with Universitas Pendidikan Ganesha in conducting joint research pertinent to local societal issues. And last but not least, the Research and Community Service Institute of Universitas Pendidikan Ganesha and all the organizing committee members for the hard work and never ending cooperation tomake this event come true.

Finally, in the name of the organizing committee, we thank you for participating in our 3rd International Conference on Vocational and Technology. Have a nice and fruitful conference. God bless you.

Om Shanti, Shanti, Shanti, Om, Wassalamu'alaikum Warahmatullahi Wabarakatuh, Namo Buddhaya.

Singaraja, November 7th 2020
Chair,

Gede Aditra Pradnyana, S.Kom., M.Kom.

WELCOME NOTE

THE 3RD INTERNATIONAL CONFERENCE ON VOCATIONAL EDUCATION AND TECHNOLOGY

November 7th, 2020

Om Swastiastu,
Assalamualaikum Warahmatullahi Wabarakatuh,
Namo Buddhaya,
Shalom,
Salam Kebajikan.
May peace be with all of us.

Let us praise the Almighty God, Ida Sang Hyang Widhi Wasa, because with his blessings, we can gather here today on a precious occasion, on the 3rd International Conference on Vocational Education and Technology (IConVET), hosted by the Faculty of Engineering and Vocation, Universitas Pendidikan Ganesha, Bali, Indonesia. Let me also extend my warmest welcome to the Keynote Speakers for this event. It is a great pleasure to have esteemed scholars to speak at our conferences.

Ladies and Gentlemen,

It is an honor for me to stand here and welcome you today as we seek to embrace scholars, researchers, and practitioners in technology and vocational education in an academic discussion that is expected to bring forward the advances in technology

and its application in vocational schools to help our nation face Industrial Revolution 4.0, Society 5.0, and also New Normal Era.

Our theme for IConVET this year is "Future of TVET Graduates: Developing Talent for Industry 4.0 and the New Normal". This theme has a vision on the importance of the latest TVET education, which is to prepare TVET graduates to compete in the era of the Industrial Revolution 4.0. As we all know, the Industrial Revolution 4.0 integrates cyber technology and automation technology. The impact of the Industrial Revolution era 4.0 is that it no longer empowers the human workforce in its application because everyone has applied the concept of automation. Of course, this is a challenge for TVET graduates, which is to be able to survive and contribute to it. The challenges in TVET education also increase when we are faced with a new normal era, which has emerged due to the Covid-19 virus outbreak. But we must be confident, with our shared roles and the right education, we will be able to create the best TVET graduates for the future.

I congratulate the committee for choosing a very state of the art theme and for organizing this event from the scratch, until today, and also all the post-conference activities in order to get the articles published by an esteemed publisher, through which our discussions today can create ripple effects that reach the intended audience across the world.

Valued Scholars,

Allow me to extend my congratulations to all the participants and presenters in this 3rd International Conference on Vocational and Technology, for taking the forerunner positions in Industrial Revolution 4.0 and Society 5.0. Thank you for your contributions to this conference and the development of education, technology and vocational education.

Last but not least, I wish you a very productive conference and God Bless you.

Om Shanti, Shanti, Shanti, Om, Wassalamu'alaikum Warahmatullah Wabarakatuh, Namo Buddhaya, Shalom, Salam Kebajikan.

Singaraja, November 7th, 2020
Rector of Universitas Pendidikan Ganesha

Prof. Dr. I Nyoman Jampel, M.Pd.
NIP. 19591010986031003

The 3rd International Conference on Vocational Education and Technology

IConVET 2020

Virtual Conference Format | November 7th , 2020

Rundown Activities

No	GMT+8	Event Description
1	08.00 – 08.30	Preparation and Participant Zoom Registration
2	08.30 – 09.00	Opening ceremony
		• Singing Indonesian National Anthem (Indonesia Raya)
		• Reading Prayers
3	09.00 - 09.30	• The Committee Chair's Report
		• Speech from Rector of Universitas Pendidikan Ganesha (and official opening of the conference)
		• Video Opening IConVET 2020
		• Online Photo Session
4	09.30 – 10.30	Presentation from Keynote Speaker 2 Prof. Dr. Drs. Putu Sudira, MP (Universitas Negeri Yogyakarta, Indonesia)
5	10.30 – 11.30	Presentation from Keynote Speaker 3 Ferry Jie, Ph.D. (Edith Cowan University, Australia)
6	11.30 – 12.00	Break
7	12.00 – 13.00	Presentation from Keynote Speaker 1 Prof. Dr. Thomas Kohler (Dresden University of Technology, Germany)
8	13.00 – 13.30	Announcements
9	13.30 – 16.00	Parallel Session
10	16.00 – 16.15	Announcements and Closing

Parallel Session Schedule

THE 3rd INTERNATIONAL CONFERENCE ON VOCATIONAL AND TECHNOLOGY

Singaraja – Bali, November 7th 2020

Room : 1
Moderator : Putu Yudia Pratiwi, S.Pd., M. Eng.
Link Room : https://conference.undiksha.ac.id/iconvet/room1

No	Paper ID	Author	Title	GMT+8
1	1	I Ketut Darma, I Gede Made Karma and I Made Anom Santiana	Development of Blended Learning in Applied Mathematics Using Schoology Applications to Improve Problem Solving Ability in Vocational Education Students	13.30 - 13.45
2	12	Deny Sutrisno and Basok Buhari	Designing Video for Nursing Skills Procedures Video Based Learning	13.45 - 14.00
3	17	Wika Rinawati, Putri Margani Ghassani and Andian Ari Anggraeni	The development of an engaging demonstration video for making shredded chicken	14.00 - 14.15
4	24	Putu Wirayudi Aditama, Putu Satria Udayana Putra, I Made Marthana Yusa and I Nyoman Tri Anindia Putra	Designing Augmented Reality SIBI Sign Language as a Learning Media	14.15 - 14.30

5	4	Indra Wijaya, Rini Sefriani and Menrisal Menrisal	Testing of The Validity of Blended Learning Based on Android Smartphones in the Computer Device Maintenance Course	13.30 - 13.45
6	45	Made Putra Jaya, Gede Rasben Dantes and I Made Candiasa	Analysis of jejak bali virtual class uses usability testing, concurrent think aloud techniques and performance measurement techniques	14.45 - 15.00
7	58	Made Dona Wahyu Aristana and Dewa Putu Yudhi Ardiana	Gamification Design for High School Student with Unstable Internet Connection During Covid-19 Pandemic	15.00 - 15.15
8	66	Niki Fadilla, Luthfiyah Nurlaela, Tri Rijanto, Sudirman Rizki Ariyanto, Latifahtur Rahmah and Samsul Huda	Effect of Problem-Based Learning on Critical Thinking Skills	15.15 - 15.30
9	67	Nofvia De Vega and Jhoni Eppendi	Students' Perceptions of Online Learning in Teacher Training and Education Faculty	15.30 - 15.45

Room : **2**
Moderator : **I Gusti Lanang Agung Raditya Putra, S.Pd., M.T.**
Link Room : **https://conference.undiksha.ac.id/iconvet/room2**

No	Paper ID	Author	Title	GMT+8
1	44	Ni Ketut Widiartini, Hadeli Haji and Ni Putu Novi Darmini	Development Of E-Learning Content In Educational Program Evaluation Courses	13.30 - 13.45
2	94	I Dewa Ayu Made Budhyani and Made Diah Angendari	Development Of Housekeeping Learning Module Based On E-Learning	13.45 - 14.00
3	91	Damiati and Made Suriani	Development Of Bit Fruit Extract (Beetroot) As A Natural Color For Tempe Noodle Products	14.00 - 14.15
4	70	Sudirtha I Gede, Widiartini Ni Ketut and Diah Angendari Ni Made	Development Of 21st Century Skill Learning Designs Through The Application Of The Concept Of Independent Learning In The Vocational Field	14.15 - 14.30
5	73	Cok Istri Raka Marsiti and Ni Wayan Sukerti	Developing Stock And Sauce Learning Materials Of European Culinary Courses For The Third Semester Students Of The Culinary Arts Vocational Education Program	14.30 - 14.45
6	74	Komang Setemen and I Ketut Purnamawan	Student Performance Assessment Strategies By Involving Peers Students	14.45 - 15.00
7	75	Ni Wayan Sukerti and Cokorda Istri Raka Marsiti	Developing The Results Of Learning Megibung For Vocational Education And Culinary Arts Students Of Ganesha Education University	15.00 - 15.15

8	64	Luh Masdarini, Risa Panti Ariani and Ida Ayu Putu Hemy Ekayani	The Utilization Of Lady Fingers Banana Flour Into Cake As Creative Product, As A Way To Empower The Local Ingredients	15.15 - 15.30
9	106	Risa Panti Ariani, Ida Ayu Putu Hemy Ekayani and Luh Masdarini	Processing Mocaf Into Pie Susu With The Addition Of Super Food 'Spirulina'	15.30 - 15.45
10	89	Ni Made Suriani and Damiati	An Experiment of Packing Ayam Betutu as Balinese Special Souvenir Using Vacuum Method	15.45 - 16.00

Room : **3**
Moderator : **Gede Arna Jude Saskara, S.T.,M.T**
Link Room : **https://conference.undiksha.ac.id/iconvet/room3**

No	Paper ID	Author	Title	GMT+8
1	55	I Nengah Eka Mertayasa, I Gede Bendesa Subawa, Ketut Agustini and Dessy Seri Wahyuni	Impact of Cognitive Styles on Students' Psychomotoric Abilities on Multimedia Course Practicum	13.30 - 13.45
2	38	Ketut Agustini, I Nengah Eka Mertayasa, Dessy Seri Wahyuni, Nyoman Karina Wendhanti and I Wayan Sukrawarpala	Student-centered Learning Models and Learning Outcomes: Meta Analysis and effect sizes on the Student thesis	13.45 - 14.00
3	80	I Gede Bendesa Subawa, I Nengah Eka Mertayasa, Ketut Agustini and Dessy Seri Wahyuni	Design of User Satisfaction Evaluation Instrument of Informatics Engineering Education Graduates, Faculty of Engineering and Vocational, Universitas Pendidikan Ganesha	14.00 - 14.15
4	110	Gede Aditra Pradnyana, I Gede Mahendra Darmawiguna, Dewa Ketut Satriawan Suditresna Jaya and Ade Sasmita	Performance Analysis of Support Vector Machines with Polynomial Kernel for Sentiment Polarity Identification: A Case Study in Lecturer Performance Questionnaire	14.15 - 14.30

5	107	I Made Ardwi Pradnyana and I Made Edy Listarta	Business Process Improvement Design of Complaints on Technical Information System Problems Using the Business Process Improvement Method at UPT. TIK Undiksha	14.30 - 14.45
6	57	Ida Bagus Nyoman Pascima and I Made Putrama	Forecasting Foreign Exchange Rate using a Combination of Linear Regression and Flower Pollination Algorithm.	14.45 - 15.00
7	108	I Nyoman Saputra Wahyu Wijaya, Ketut Agus Seputra and Wayan Gede Suka Parwita	Comparison of the BM25 and Rabin Karp Algorithm for Plagiarism Detection	15.00 - 15.15
8	96	Ketut Agus Seputra and Kadek Yota Ernanda Aryanto	Design of An Interoperable Social Assistance Health Insurance Validation System	15.15 - 15.30
9	81	I Gede Mahendra Darmawiguna, Gede Aditra Pradnyana and Ida Bagus Jyotisananda	Indonesian Sentiment Summarization for Lecturers Learning Evaluation by Using TextRank Algorithm	15.30 - 15.45
10	43	Made Diah Angendari and Putu Agus Mayuni	Development of Image Based International Bridal Makeup Course Textbook Fosters Learning Independence of Beauty Students	15.45 - 16.00

Room : **4**
Moderator : **Nyoman Sugihartini, S.Pd., M.Pd**
Link Room : **https://conference.undiksha.ac.id/iconvet/room4**

No	Paper ID	Author	Title	GMT+8
1	84	Luh Putu Eka Damayanthi, Ida Ayu Reviena Damasanti and Kadek Trisna Des Ryantini	Identifying students' Learning Difficulties in Human and Computer Interaction Course through the Implementation of Project Based Learning Model	14.30 - 14.45
2	10	Irma Nuur Rochmah, Wu-Yuin Hwang and Priyanto	Students Acceptance toward using A Mobile Learning in Fractions	13.45 - 14.00
3	30	Wayan Andrika Putera and I Made Candiasa	Analysis of E-Learning User Satisfaction ITB STIKOM Bali Using End User Computing Satisfaction (EUCS) Method	14.00 - 14.15
4	36	I Putu Mas Dewantara and I Ketut Dibia	The Principles of Blended Learning Design with Heutagogy Approac thourgh E-Ganesha Moodle in Indonesian Language Learning	14.15 - 14.30
5	27	Nyoman Sugihartini, Dessy Seri Wahyuni and Sintya Dewi	Content Development of Flipped Classroom-based for Microteaching Course	14.30 - 14.45
6	28	Caca Emile Supriana	Work System Method as an E-learning Design Framework in Private Universities	14.45 - 15.00
7	109	Ni Komang Arie Suwastini, Jesica Vanessa Hutapea, Ni Wayan Nilam Puspawati and Gede Rasben Dantes	Consumption and Production of Short Film: toward the Conceptualization of Multimodal Language Learning for Developing 6Cs Skills in Digital Age	15.00 - 15.15

8	79	I Putu Suka Arsa and Nyoman Santiyadnya	The Development Of Interactive Learning Media Autoplay Media Studio Eight In Digital Simulation Lessons At Smk Ganesha Nusantara Singaraja	15.15 - 15.30
9	26	P Wayan Arta Suyasa, Dewa Gede Hendra Divayana and Mg. Rini Kristiantari	The Effect of Digital Books Based on Kvisoft Flipbook Maker on Student Learning Outcomes	15.30 - 15.45
10	39	Dessy Seri Wahyuni, Ketut Agustini, Gede Ariadi, I Nengah Eka Mertayasa and Nyoman Sugihartini	The impact of external knowledge on organization performance with indirect effect of instructional agility and process innovation effectiveness	15.45 - 16.00

Room : **5**
Moderator : **I Made Putrama, S.T., M.Tech**
Link Room : **https://conference.undiksha.ac.id/iconvet/room5**

No	Paper ID	Author	Title	GMT+8
1	18	Fransiscus Fery Setiadi, Made Windu Antara Kesiman and Kadek Yota Ernanda Aryanto	Detection of DoS Attacks Using Naive Bayes Method Based on Internet of Things (IoT)	13.30 - 13.45
2	103	Jupi Permana Bayu, Komang Agus Ady Aryanto, Gede Suweken and Kadek Yota Ernanda Aryanto	IoT-Based Portable Modules for Energy Consumption Monitoring in Smart Home System	13.45 - 14.00
3	68	Idhar, Purnamawati, Riana Tangking and Ruslan	Trainer and Remote Lab Design using Internet of Things (IoT)	14.00 - 14.15
4	92	I Gede Pandy Sastrawan, I Gede Aris Gunadi and Kadek Yota Ernanda	Monitoring of the Feasibility of Rice Field Using IoT Technology Based On The Forward Chaining Method	14.15 - 14.30
5	29	I Gusti Ayu Sri Melati, Ni Nyoman Utami Januhari and Alberth Yaputra	Road Extraction In Satellite Image With Fuzzy C-Mean	14.30 - 14.45
6	88	Made Windu Antara Kesiman and I Made Dendi Maysanjaya	A Model for Post Transliteration Suggestion for Balinese Palm Leaf Manuscript with Text Generation and LSTM Model	14.45 - 15.00
7	93	I Made Dendi Maysanjaya, Made Windu Antara	Evaluation of Contrast Enhancement Methods on Finger Vein NIR Images	15.00 - 15.15

		Kesiman and Made Putrama		
8	8	Komang Sudana Yasa Pande, Dewa Gede Hendra Divayana and Gede Indrawan	Comparative Analysis of Naive Bayes and KNN on Prediction of Forex Price Movements for GBP/USD Currency at Time Frame Daily	15.15 - 15.30
9	104	A.A. Gede Yudhi Paramartha and Luh Joni Erawati Dewi	Development of search engine service for academic official documents	15.30 - 15.45
10	76	I Made Putrama, Gede Aditra Pradnyana, A. A. Gede Yudhi Paramartha, I Gede Mahendra Darmawiguna, I Made Agus Wirawan, Ida Bagus Nyoman Pascima, I Nyoman Saputra Wahyu Wijaya and Kadek Yota Ernanda Aryanto	Educational Big Data Infrastructure: Opportunities, Design And Challenges	15.45 - 16.00

Room : **6**
Moderator : **I Wayan Sutaya, S.T., M.T.**
Link Room : **https://conference.undiksha.ac.id/iconvet/room6**

No	Paper ID	Author	Title	GMT+8
1	20	Ni Wayan Sumartini Saraswati, I Dewa Made Dwi Artakusuma and I Gusti Ayu Agung Diatri Indradewi	Modified Genetic Algorithm for Employee Work Shifts Scheduling Optimization	13.30 - 13.45
2	34	Yuriko Christian and I Dewa Made Bayu Atmaja Darmawan	Rindik rod voice audio separation with spectral subtraction method	13.45 - 14.00
3	25	I Made Agus Oka Gunawan, Gede Indrawan and Sariyasa	User Experience Evaluation of Academic Progress Information Systems using Retrospective Think Aloud and User Experience Questionnaire	14.00 - 14.15
4	46	I Gusti Ngurah Bagus Aryotejo, I Made Candiasa and Dewa Gede Hendra Divayana	Smart School Strategic Design for Information Systems Using Framework Ward & Peppardin SMK Negeri 1 Tampaksiring	14.15 - 14.30
5	54	Putu Angga Suta Dharmawan and I Gusti Ayu Agung Diatri Indradewi	Double Exponential Smoothing Brown Method for Sales Forecasting System with a Linear and Non-stationary Data Trend	14.30 - 14.45
6	85	M H Setiawan, M W Aditya, L H Loekito, G Indrawan	Designing the Balinese Script-to-Speech Synthesis System Using Noto Serif Balinese Font	14.45 - 15.00
7	22	Selviana Yunita and Eka Wahyu Sholeha	Sentiment Analysis of Online Travel Agent Using Naïve Bayes and K-Nearest Neighbor	15.00 - 15.15

8	72	I Made Dwi Raka Mudiarta, Dewa Gede Hendra Divayana and Komang Setemen	Alkin based on SAW Evaluation Model Simulation for Evaluating Flip Learning in SMK TI Bali Global Jimbaran	15.15 - 15.30
9	100	Rina Dwijuliani, Tri Rijanto, Munoto Munoto, Luthfiyah Nurlaela, Ismet Basuki and Maspiyah Maspiyah	Increasing Student Achievement Motivation During Online Learning Activities	15.30 - 15.45
10	31	I Wayan Sutaya, Ketut Udy Ariawan and I Gede Nurhayata	Design of Automatic Three Phase Load Balancing for Dynamic Electrical Installation	15.45 - 16.00

Room : **7**
Moderator : **Gede Saindra Santyadiputra, S.T., M.Cs**
Link Room : **https://conference.undiksha.ac.id/iconvet/room7**

No	Paper ID	Author	Title	GMT+8
1	102	Luh Joni Erawati Dewi, I Nyoman Saputra Wahyu Wijaya and Ketut Agus Seputra	Web-Based Buleleng Regency Agriculture Product Information System Development	13.30 - 13.45
2	9	I Gusti Made Ngurah Desnanjaya and I Made Aditya Nugraha	Portable Waste Capacity Detection System Based On Microcontroller and Website	13.45 - 14.00
3	101	Made Santo Gitakarma, Tri Kuntoro Priyambodo, Yohanes Suyanto and Raden Sumiharto	Architectures, Frameworks, and Applications in IoT-based Smart Environment : A Review	14.00 - 14.15
4	71	I Gede Nurhayata, I Wayan Sutaya and Ketut Udy Ariawan	Development of Prepaid Water Meters Based on AT89S52 Microcontroller	14.15 - 14.30
5	77	Purwono Prasetyawan, Selamet Samsugi, Agus Mulyanto, Muhammad Iqbal, Rizky Prabowo and Ardiansyah	A Prototype of IoT-based Smart System to Support Motorcyclists Safety	14.30 - 14.45
6	40	Agus Aan Jiwa Permana, I Gede Parta Sindu, I Made	Developing home health care application to patient during the covid19 pandemic	14.45 - 15.00

		Pageh and Komang Pasek Oka Sukasana		
7	63	I Made Pageh, Agus Aan Jiwa Permana and Kadek Suranata	Usability testing and the social analysis on online counseling system for recommendations in technical vocational schools	15.00 - 15.15
8	99	Gede Saindra Santyadiputra, Gede Arna Jude Saskara and I Made Edy Listartha	The effectiveness of Automatic Network Administration (ANA) in Network Automation simulation at Ganesha University of Education	15.15 - 15.30
9	56	Agus Sugiharto	The Digital Strategic Partnership of Covid-19 Pandemic in The Perspective of National Resilience in Indonesia	15.30 - 15.45

Room : **8**
Moderator : **Gede Wiratmaja, S.T., M.T**
Link Room : **https://conference.undiksha.ac.id/iconvet/room8**

No	Paper ID	Author	Title	GMT+8
1	21	Dewa Gede Hendra Divayana	The Simulation of DIVAYANA Formula Calculation to Determine Priority of Recommendation in Evaluation Activities	13.30 - 13.45
2	23	I Gusti Putu Asto Buditjahjanto, Muhammad Syariffuddin Zuhrie, Luthfiyah Nurlaela and Ismet Basuki	Do Educational Robotics Competitions' Impact on Students' Learning?	13.45 - 14.00
3	32	I Made Dwi Suta Atmaja, Dewa Gede Hendra Divayana and Komang Setemen	The design of the CSE-UCLA evaluation model using TOPSIS and AHP methods for optimizing digital library services in Badung Regency	14.00 - 14.15
4	35	I Ketut Suharsana, Dewa Gede Hendra Divayana and Gede Indrawan	Evaluation Instrument Testing of Change Agents in Denpasar High Court with Stake Model	14.15 - 14.30
5	51	I Gede Partha Sindu and Agus Aan Jiwa Permana	Design Project Based E-Learning Content for Basics Computer System Courses	14.30 - 14.45
6	59	I Gede Partha Sindu, Gede Saindra Santyadiputra and Agus Aan Jiwa Permana	Developing Articulate Storyline 3 based Learning Object in Supporting (SPADA) Indonesia Online Learning	14.45 - 15.00

7	98	Nyoman Santiyadnya	Implementation Of The Cipp Model In The Study Of The Effectiveness Evaluation Of The Research Board Implementation In The High School	15.00 - 15.15
8	78	Theresia Sinta Silvana, Ekohariadi Ekohariadi, I Gusti Putu Asto Buditjahjanto, Tri Rijanto, Munoto Munoto and Luthfiyah Nurlaela	Study Of The Implementation Of Online Learning Models In Vocational Schools	15.15 - 15.30
9	65	Eddy Sutadji, Herawati Susilo, Aji Prasetya Wibawa and Syaiful Nur Rohmad	Adaptation Strategy of Authentic Assessment in Online Learning During The Covid-19 Pandemic	15.30 - 15.45

Room : **9**
Moderator : **I Made Edy Lisartha, S.Kom., M.Kom**
Link Room : **https://conference.undiksha.ac.id/iconvet/room9**

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1	47	I Made Candiasa, Ni Made Sri Mertasari and Made Aryanta	Social Media as Integrated character Education Media	13.30 - 13.45
2	48	Ni Made Sri Mertasari and I Made Candiasa	Application of Partial Credit Models in Testing Performance Assessments for Programming Course	13.45 - 14.00
3	53	Putu Agus Mayuni and I Dewa Ayu Made Budhyani	Analysis Of The Utilization Of Bali Local Culture As Learning Resources In Designing Drapping Courses In The Family Welfare Education Study Program Undiksha	14.00 - 14.15
4	83	Annisa Nur Aini, Rita Ismawati, Sri Handajani and Tri Rijanti	Employability Skills of Vocational Education Graduates Students Needed by 4th Industrial Revolution Workplace	14.15 - 14.30
5	16	Nila Handayani, Dian Agustina and Mawadda Azizah Sari Waruwu	E-MAGAZINE-BASED LEARNING MEDIA INNOVATION IN PASTRY COURSE, TATA BOGA EDUCATION STUDY PROGRAM	14.30 - 14.45
6	42	Purnamawati, Muhammad Akil and Nuridayanti	A Feasibility Study of Sensor and Transducer Trainers as a Learning Media for Electronics Engineering Students	14.45 - 15.00

7	52	I Made Marthana Yusa, I Gede Adi Sudi Anggara, I Ketut Setiawan, Rodney Westerlaken and Tutut Herawan	Revitalization of Dadong Dauh Balinese Children's Illustrated Song into 2-Dimensional Animation as an Educational Tourism Strategy	15.00 - 15.15
8	62	I Made Marthana Yusa, I Dewa Gede Agung Pandawana and I Nyoman Agus Suarya Putra	Manik Angkeran Storytelling Based on Android Mobile Tap Gameplay	15.30 - 15.45
9	97	Alfiantin Noor Azhiimah, Tri Rijanto, Munoto Munoto, Luthfiyah Nurlaela, Ismet Basuki and Joko Joko	Analysis of online learning media selection for student learning independence during the Covid-19 pandemic	15.30 - 15.45

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Keynote 1: Prof. Dr. Thomas Kohler

The acceleration of digital technologies and its meaning for theorizing TVET talent development at the interface between education and industry

From an educational perspective developing talents for industry 4.0 cannot be understood without a media didactic framing. As there are only single pieces of a theory of digital learning available so far, the author suggests discussing the acceleration of digital technologies and its meaning for theorizing TVET talent development at the interface between education and industry.

Digitization is accompanied by the transformation of analogue media formats and communications into (permanent) digital mediatisation. This leads in particular to changing roles and representation of human actors in knowledge development (research) as well as knowledge distribution (education) towards data-based representations of all (!) actors. Since this has not yet been modelled theoretically, it can be assumed that such a modelling in form of a media-didactic theory can provide a renewed understanding of how talent development may be designed - especially for Industry 4.0.

Any media didactic framework must derive design approaches for meeting the complexity in digitized worlds. Indeed it is discussed design approaches in theory versus implementation may take into account (educational) roles in order to support the educational process effectively. Especially data-based versus object-based versus personal representation does not only allow but necessarily lead to multiple representations. However, those representations may even be possibly without implementing classical educational roles carried out by human actors.

What might be a basic conclusion? The above mention actors (experts, educationalists, learners and virtual supports) meet each other (possibly exclusively)

via their data-based representations. For an effective implementation of development processes, the roles must be recognized and mapped in a suitable way. It remains an open question whether such a theorization has to focus even more on the perspective of knowledge genesis [=research], which clearly goes beyond the perspective of knowledge transfer [=education].

Based on the above-mentioned theoretical considerations, the following didactic basic questions are to be concluded by the theory-based derivation of specific education design approaches:

(1) For didactic media design a theoretical approach from the field of connectivist theory would have to be added to any knowledge processing theory in order to model design variants of digitally supported modes of co-construction in knowledge generation and processing (cf. Köhler 2005)
(2) For understanding differentiated roles in educational practice versus support a theoretical approach toward the mode of action and the expectations of impact for such roles in virtual educational communities should be applied (cf. Köhler et al., not published)

There is a stronger need for socio-technical guidance than ever before as the development and deployment of complex, networked, digital systems poses ethical challenges. These challenges differ in terms of both their scope and the level (individual, organizational and societal) at which they can occur and must therefore be reflected and addressed in each individual case. Since the educational guidelines/models/theories currently already in use have a high degree of abstraction and therefore often have little power of orientation in practice due to a lack of transfer to the individual case, instrumental support needs to be co-constructed which provides assistance in the ethical formation of judgement and thus orientation. Furthermore, the construction of the knowledge intense production systems of industry 4.0 is complicated by the fact that those bring together different perspectives of complex, socio-technical arrangements, which are not well aligned.

Keynote 2: Prof. Dr. Drs. Putu Sudira, MP

TVET's New Paradigm For Talents Development In The Era Of Industry 4.0

The Industrial Revolution 4.0 (IR 4.0) requires new intelligence in develop the talents. Gardner typology of multiple intelligences (spatial, linguistic, intra-personal, interpersonal, logical-mathematical, musical, bodhy-kinesthetic, and naturalist) used a biological perspective. Gardner multiple intelligences is useful to understand individual's cognitive competence in terms of a set of basic abilities or "intelligences" (Cheng, 2005). When we want to develop a new generation of leaders or professionalis workers to lead the community in Industries 4.0 this perspective may be too "basic" and limited and does not have a strong relevance to TVET in such a complex context (Cheng, 2005). The biological typology of multiple intelligence may be useful to design curriculum and pedagogy for early children education or lower primary education to develop their basic abilities or talents, but it is not so sophisticated enough for TVET (Berman, 1995; Guild & ChockEng, 1998; Guloff, 1996; Mettetal & Jordan, 1997; Teele, 1995, Sudira, 2020). Human intelligence for IR 4.0 can be contextualized and categorized into the nine Contextualized Multiple Intelligences (*Wiweka Sanga;* CMI-WS), including (1) learning intelligence, (2) emotional-spiritual intelligence, (3) social-ecological intelligence, (4) body-kinesthetic intelligence, (5) arts & cultural intelligence, (6) intellectual intelligence, (7) technological intelligence, (8) political intelligence, and (9) economic intelligence.

CMI-WS develop a new generation of leaders and professionalis workers for IR 4.0 in the aspect of emotional-spiritual, social-ecology, body-kinesthetic, arts & culture, intellectual, technology, politic, economy, and learning. CMI-WS equip citizens with a broad mindset or multiple intelligences to deal with the diverse challenges in the new era IR 4.0. CMI-WS was facilitating intelligence transfer, talent & creativity development. CMI-WS can be used for talent development to educate leaders or

professionalis workers who are humanist-spiritual, social and environmental, healthy, fit, passionate, smart workers, have the art of leadership, are innovative, skilled in developing and applying technology, builders of networks of cooperation and communication, and resilient lifelong learning.

TVET should put emphasis on developing students' ability to persistently learn how to learn systematically, creatively, and critically via web. Learning Intelligence as core of eight intelligence should be maximize the opportunities for the CMI-WS development via individualization, localization, nationalization, and globalization (Quarter-lization). The Industrial Revolution 4.0 requires the new intelligence talents of CMI-WS. There are nine CMI-WS talents, namely: learning talents, emotional-spiritual talents, social-environmental talents, body-kinesthetic talents, intellectual talents, economic talents, technological talents, political talents, and arts-cultural talents. The nine talents of CMI-WS are built in individual, local, national, global dimensions. TVET in the era of the Industrial Revolution 4.0 requires a new paradigm of curriculum and learning. The new TVET curriculum characterized by CMI-WS focused curriculum, quarterlized curriculum structure, world-class and globalized curriculum, localized curriculum, individulized curriculum, facilitatingstudents' lifelongself–learning, multiple sources of learning and teaching, globally and locally networked learning and teaching WS theory. The new TVET learning characterized by self-learning, self-actualizing process, focus on how to learn, self reliant, self, directing, self determine, peeragogy-cybergogy, self rewarding, multiple sources of learning, networked learning, lifelong and every where, unlimited opportunities, world-class learning, local and international outlook.

Keynote 3: Ferry Jie, Ph.D

Developing Competencies for Industry 4.0 and the New Normal

According to World Economic Forum's Future of Jobs Report, due to the adoption of technology increases, there are around 50% of all workers will require reskilling by 2025. There are two top the list of skills employers will grow by 2025: critical thinking and problem solving.

Critical thinking and problem-solving top the list of skills employers believe will grow in prominence in the next five years. Newly emerging this year are skills in self-management such as active learning, resilience, stress tolerance and flexibility.

There are a lot of definitions about competency, such as:

- Describes what people need to be able to do to perform their jobs well (Armstrong, 1998)
- Demonstrated ability including knowledge, skills, and attitudes to perform a task successfully according to the standards (Porasmaa and Kotonen, 2010)
- A combination of resources and capabilities within an organisation (Hitt et.al, 2005)
- Refer to skills or knowledge that leads to superior performance (Richey et.al, 2007)

In the previous research (Sangka, B., Rahman, S, Jie, F., (2019), we proposed the competency framework for operations managers in logistics providers:

- Management dimension, which has 5 different competencies (leadership, people management, teamwork and communication, change management and negotiation)

- Logistics dimension, the can be divided into 3 competencies (transportation and distribution management, warehouse and inventory management, project management)
- Business dimension, has 5 competencies should be addressed (analytical, managing results, continuous improvement, creating and maintaining corporates social responsibility and cultural awareness)

While the Information and computer technology dimension included hardware and software knowledge, and information handling knowledge as the critical competencies.

DEVELOPMENT OF BLENDED LEARNING IN APPLIED MATHEMATICS USING SCHOOLOGY APPLICATIONS TO IMPROVE PROBLEM SOLVING ABILITY IN VOCATIONAL EDUCATION STUDENTS

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Abstract. This study aims to determine the feasibility of a model of blended learning applied mathematics using schoology for vocational education. Research using the 4D model development method includes: Define, Design, Develop, and Disseminate, conducted at the Politeknik Negeri Bali. Data was collected using a validation sheet and student response questionnaire sheet. Data were analyzed descriptively. As a result, the design of applied mathematics blended learning using schoology achieved: feasibility level of 84.91% (high enough), practicality 78.84% (quite practical), and the compliance was 88.02% (very high). Blended learning applied mathematics is very appropriate to be used as a model of learning in vocational education. The design development can be continued to the stage of effectiveness testing, evaluation and dissemination.

TESTING OF THE VALIDITY OF BLENDED LEARNING BASED ON ANDROID SMARTPHONES IN THE COMPUTER DEVICE MAINTENANCE COURSE

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Abstract. This study aims to determine the validity level of blended learning media to support the learning process through blended learning. This type of research is Research and Development (R&D) using the 4D development model, namely the steps: (1) define, (2) design, (3) develop, and (4) assess. Based on the research that has been done, the average value of the test assessment for blended learning media to support the learning process through Blended Learning is 94.28%, so that the level of validity used is very valid can be interpreted. In conclusion, based on the assessment and input from material experts, Android application software experts and multimedia experts, namely the blended learning media is suitable for use in learning the maintenance of computer devices in the Informatics Engineering Education Department.

COMPARATIVE ANALYSIS OF NAÏVE BAYES AND KNN ON PREDICTION OF FOREX PRICE MOVEMENTS FOR GBP/USD CURRENCY AT TIME FRAME DAILY

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Abstract. This study aims to analyze the comparison of the Naïve Bayes and kNN on the Prediction of Forex Price Movements for GBP / USD on Time Frame Daily. The data used is taken from the metatrader-4 application which is often used by forex traders when making transactions. There are 2,145 data rows consisting of the date, hour, open price, high, low, close, and transaction volume columns. From this data, a column for the target class is created with the name 'result'. The result column is filled with increasing or decreasing values. The value of increase or decrease is obtained from the comparison of the previous closing price with the closing price of the next day. This study analyzes the results of the comparison of the data mining classification algorithm between the Naïve Bayes algorithm and kNN. The 2,145 data were divided into 2 parts, namely 80% for training data and 20% for testing data. The analysis is done by comparing the precision, recall, and accuracy test results for each algorithm. The conclusion of this study is that the kNN algorithm is better than the Naïve Bayes algorithm in case prediction of forex price movements for GBP/USD currency at time frame daily.

PORTABLE WASTE CAPACITY DETECTION SYSTEM BASED ON MICROCONTROLLER AND WEBSITE

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Abstract. Trash became a problem that is often found in everyday life, so the condition of the saltation needs special attention, especially in the garbage. The condition of the garbage should always be in the prepared state and if it has been full of immediately when it does not cause the waste to continue accumulating and scattered. The transport of waste performed by the clerk is still slow and spends a lot of vehicle fuel. This is because the cleanliness has still checked all the one-one-garbage. In this study the portable capacity of the capacity of dirty, watered, ultrasonic sensors, and websites. This system can help the cleanser in monitor the capacity of the waste, so the officer does not need to check all the one-one-garbage. The data collection techniques used are through literature studies, a system of reading, tool-making stages, website-making steps, and system testing stages. The test results show that the system that is made can function as expected. The system can perform measurements with an average error of 0.66% of 10 measurements. The SIM900 connection with Microcontroller and the Internet was successfully done. Testing in the storage is filled and monitoring on the website page is by the condition of the trash.

STUDENTS ACCEPTANCE TOWARD USING A MOBILE LEARNING IN FRACTIONS

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Abstract. Most of the fifth-grade students have been familiar with mobile technology and commonly used it to play games. Accordingly, the school did not allow fifth-grade students to bring or operate mobile technology while they learned at school in order to keep students' attention on learning. However, during the pandemic COVID-19 condition, the government demands students to learn from home. Thus, one solution is using mobile technology to maintain communication and interaction between students and teachers during teaching and learning activities from home. Researchers develop a mobile application, called U-Fraction, to assist students in the mobile learning process. The developed application will be associated with authentic learning so that students have a more understanding of the real-world problems. Students' perception toward the mobile learning supported by U-Fraction will be measure using TAM with partial least square analysis. The result shows that students tend to use this mobile application for mobile learning. Students also believe that the use of U-Fraction for mobile learning can help their learning process.

DESIGNING VIDEO FOR NURSING SKILLS PROCEDURES VIDEO BASED LEARNING

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Abstract. Blended Learning is learning that combines face-to-face and online. In nursing practice courses, there was a need for learning media that explains basic skills action procedures in nursing that can be accessed online. So, it is necessary to design instructional media for action instructions for basic skills in nursing. The purpose of this research was to make video-based learning media as a guide to nursing procedures and to find out the results of the video-based learning media test. Method of instructional media designing go through 8 stages of activities, namely: (1) writing video scripts, (2) taking video images, (3) editing videos, (4) validating, (5) revision, (6) uploading videos, (7) presenting videos to students and (8) Evaluation. This research is expected to produce a product in the form of teaching materials in the form of learning videos to support the lecture process. The study result showed that videos was very worth it.

E-MAGAZINE-BASED LEARNING MEDIA INNOVATION IN PASTRY COURSE, TATA BOGA EDUCATION STUDY PROGRAM

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Abstract. This study aims to (1) develop e-Magazine learning media for culinary students in the Pastry course (2) to determine the assessment of media experts and material experts on learning media, (3) to determine the assessment of culinary students on learning media, and (4)) determine the feasibility of learning media based on the assessment of media experts, material experts and students. The method used in this research is research and development (Research and Development). This research was conducted at the Faculty of Engineering, State University of Medan.The resulting learning media is in the form of e-Magazine media. Data obtained through questionnaire techniques, assessment sheets from media experts and material experts. The subjects of this study were 30 semester students of Catering Unimed, totaling 30 undergraduate students. Based on the results of data analysis and discussion, it can be concluded that the e-Magazine learning media can help teachers and students in developing learning media, especially development for increasing student knowledge. The use of e-Magazine media has a positive impact on student knowledge, with an average score of the experimental class being higher at 43 and the control class with an average of 39.14.

THE DEVELOPMENT OF AN ENGAGING DEMONSTRATION VIDEO FOR MAKING SHREDDED CHICKEN

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Abstrak. The research aims at developing a learning video to make shredded chicken and testing its feasibility. This video demonstrates the steps of product making. This research can be categorized as research and development (R&D) with a 4D model (Define, Design, Develop, and Disseminate). The video was taken with multiple camera angles and completed with text annotation, picture, animation, music, and voice lay-over. The data was collected through interviews and questionnaires for feasibility testing. The data were analyzed using quantitative descriptive analysis. The stage of define was a needs analysis, while the design stage consisted of testing recipes, scriptwriting, selection of presenters, talents, dubber, and the video team and preparing tools and materials. The develop stage covered the process of shooting, recording, editing, and feasibility test by two material experts and a media expert. Meanwhile, the disseminate stage referred to the feasibility test among 30 students of State Vocational High School 1 Cangkringan, and the video dissemination was through the YouTube channel. The feasibility test results based on the material experts were 90.96%, the media expert was 98.96%, and the student was 85.35%, respectively. It means that this video is declared very suitable to be used as a learning medium.

DETECTION OF DOS ATTACKS USING NAIVE BAYES METHOD BASED ON INTERNET OF THINGS (IOT)

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Abstract. Internet of Things (IoT) is one form of technology that is trending today. Interconnecting networks on IoT, that useful in the automation process, have vulnerabilities to network-based disruptions and attacks such as Denial of Service (DoS). This study aims to implement the Naive Bayes algorithm to predict attribute classes using training datasets from NSLKDD with the KDD99 format and testing data obtained from the log process of DoS attacks on IoT-based devices. The advantage of using Naive Bayes is that this method only requires a small amount of training data to determine the estimated parameters needed in the classification process. The results of research conducted have been able to detect attacks on IoT devices by using the help of snort tools to capture traffic logs. The results from the log are then converted into KDD99 format and processed by the Naive Bayes method. This research uses a training dataset from NSLKDD with KDD99 format which is widely used in various studies and testing data obtained from the IDS log process on the Raspberry Pi 3. The attributes used are 9 attributes namely service, flag, src_bytes, dst_bytes, srv_serror_rate, same_srv_rate, diff_srv_rate, dst_host_srv_diff_host_rate and dst_host_srv_serror_rate. The results of the research analysis showed an accuracy of 64.02%. These results are good, but some are still different from the actual results because the testing data and training data are taken from two different datasets, so they have different characteristics.

MODIFIED GENETIC ALGORITHM FOR EMPLOYEE WORK SHIFTS SCHEDULING OPTIMIZATION

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Abstract. Arranging an employee shift work's schedule requires high accuracy. It is because we have to pay attention to several constraints simultaneously. The genetic algorithm presents as a method which can automatize the process of arranging the schedule as well as optimizing the result of the schedule. The Shala Bali is a hospitality business which has employed dozens of employees, thus scheduling the shift work of the employee is something complex. This research aimed to produce a shift work schedule of the employees in a week and to know the optimum genetic algorithm parameter in this case. The constraints that are taken into account in the arrangement of the schedule include the schedule conflict of the employees in one shift, schedule conflict of employees in 1 day, the same composition of employees per shift, employees may not get morning shifts after previously getting a night shift, each shift has at least 1 employee in the front office, and each employee is required to get 1 day off within 1 schedule period. This study was able to produce an optimal work schedule of employees with crossover probability (Pc) of 0.6, and mutation probability (Pm) of 0.3. The modification algorithm in chromosome generation and chromosome structure in this study results that changes in gene length (additional number of employees) do not have to be followed by an increase in the number of chromosome populations to get optimum results.

THE SIMULATION OF *DIVAYANA* FORMULA CALCULATION TO DETERMINE PRIORITY OF RECOMMENDATION IN EVALUATION ACTIVITIES

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Abstract. Evaluation activities are not carried out to determine whether to pass or not the program being evaluated. Evaluation activities tend to provide recommendations for improving or completion of the constraints that are still found in the program being evaluated. The problem that often occurs in the field is the difficulty in determining recommendation priority for each evaluation aspect. Therefore, a precise and accurate formula is needed to determine the recommendation priority in an evaluation activity, so that later the evaluation results will be more optimal. The purpose of this study was to demonstrate that there is a *DIVAYANA* formula calculation simulation in determining recommendation priority. This research approach was evaluative with research stages that follow the *DIVAYANA* model stages. This research focused on the *DIVAYANA* formula part which lies at the Nominate stage. The subjects involved in the initial data collection were ten students from the Department of Informatics Education, *Universitas Pendidikan Ganesha*. The subjects involved in determining the weight for the evaluation component were four experts. The tool used for initial data collection and expert weight determination was questionnaires. The analysis technique was used in this research by checking the correctness of the *DIVAYANA* formula calculation based on case proof. The results showed that the process of *DIVAYANA* formula calculating simulation had been running well as evidenced by the accuracy of the results of determining priority recommendation.

SENTIMENT ANALYSIS OF ONLINE TRAVEL AGENT USING NAÏVE BAYES AND K-NEAREST NEIGHBOR

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Abstract. Social media has impact for decision maker to get more insights broadly. Including for online travel agent company, where costumer's interest to use online travel agent for their chosen agent will grows along with the high number of customer's satisfaction. As a one of the most important point in distribution, company provides a platform that reliable and effective to purchase a trip and share information of their experience through Online travel agent. It is important to know how consumer considerate which one the online travel agent they choose. One of their method is looking at the reviews. Facebook is one of social media that provide numerous reviews through comments sections. The research purposes are twofold, algorithm comparison and reveal the effect of uppercase as well as punctuation mark. The accuracy comparison between Naïve Bayes and K-Nearest Neighbor is provided against the datasets. This research collects the data from user comments on facebook about the biggest three online travel agents in Indonesia. We classify the comments into three categories which are positive, negative, and neutral. The result of this research is found that K-Nearest Neighbor have slightly higher accuracy than the Naïve Bayes. Moreover, lowercase text without punctuation achieves better accuracy for both of algorithm.

DO EDUCATIONAL ROBOTICS COMPETITIONS IMPACT ON STUDENTS' LEARNING?

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Abstract. The development of robot technology has grown rapidly. Robots have been widely used in various aspects to help human interests. In the education sector, robots have also been used as a learning tool that is used to assist in studying fields such as science and technology. Currently, to encourage the development of robots in the education sector, robot competitions are held with various kinds of events. The types of robots developed to participate in robot competitions are also various, such as mobile robot contest, modular robot contest, humanoid robot contest, flying robot contest, underwater robot contest, innovation robot contest, brick robot contest, and VR robot contest. The robot competition event can be national and international. The purposes of this study are to identify what kind of skills are obtained by students after following the learning process using educational robotics competitions and to determine the appropriate learning model for the use of educational robotics competitions in studying the field of science and technology. The research to be carried out is a literature review research. The research method is the Comprehensive Literature Review (CLR). This method has three phases such as exploring phase, 2) interpretation phase, and communication phase. The results showed that the learning model that was widely used in educational robotics competitions was project-based learning and was followed by problem-based learning. The skills obtained are to assist understanding science and technology, to develop computer programming skills, to sharpen problem-solving

capability, to foster creativity and innovation, to bridge the gap between theory and practice, to practice teamwork and social skills.

DESIGNING AUGMENTED REALITY SIBI SIGN LANGUAGE AS A LEARNING MEDIA

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Abstract. Sign language is a language used by deaf people to exchange information. Indonesia has two sign languages used in its application, namely SIBI and BISINDO. SIBI is an adaptation of the American Sign Language which is currently being applied in a special school (SLB) environment. To provide support in learning SIBI sign language, in technological advances, the design of Augmented Reality to introduce the letters SIBI will help in the learning process. The black box test results show all the features and functions of the application can run well. In observing the response time when scanning markers using the Xiaomi PocoF1 marker on the letters SIBI, it has an average time of 6.05 seconds. Observation of the scan distance of the SIBI letter, the average scan distance of the marker can be scanned at a distance of 5 cm to 50 cm.

USER EXPERIENCE EVALUATION OF ACADEMIC PROGRESS INFORMATION SYSTEMS USING RETROSPECTIVE THINK ALOUD AND USER EXPERIENCE QUESTIONNAIRE

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Abstract. SIsKA-NG is the result of an advanced development of the thesis management information system at the Computer Science Study Program, Ganesha University of Education. Usability evaluation needs to validate development results based on user requirements. This research aims to identify problems and user satisfaction when using SISKA-NG with student access. This research uses Retrospective Think Aloud in specifying difficulties or user suggestions and User Experience Questionnaires to obtain user satisfaction scores. Evaluation was carried out on 20 respondents who were selected using simple random sampling from 139 active SIsKA-NG users. Retrospective Think Aloud produces 4 recommendations for improvement of SIsKA-NG. User satisfaction analysis shows that all aspects of the user experience are in the excellent category. The average score for each aspect is as follows: attractiveness aspect is 2,23, perspicuity aspect is 2,30, efficiency aspect is 2,49, dependability aspect is 2,55, stimulation aspect is 2,30, and novelty aspect is 2,35. Future research will focus on the evaluation of SIsKA-NG in all other study programs at Undiksha Postgraduate.

THE EFFECT OF DIGITAL BOOKS BASED ON KVISOFT FLIPBOOK MAKER ON STUDENT LEARNING OUTCOMES

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Abstract.This study aims to determine the learning outcomes of students who use digital books based on the kvisoft flipbook maker with students without using digital books based on kvisoft flipbooks. It is because students learning outcomes were low so we use digital books based on kvisoft flipbook maker. This type of research was a quasi-experimental design with Posttest-Only Control Group Design. The data collection method used was the description test method to measure student learning outcomes. The learning outcome data were then analyzed using one-way ANOVA with prerequisite tests, namely the normality test and the homogeneity test. The results showed that there were differences in the learning outcomes of students who used kvisoft flipbook-based digital books and students without using kvisoft flipbook-based digital books. The results of the analysis with a significance of 0.000. If the significance level is set = 0.05, then the significance value is smaller than α so that F is significant. This means that H0 is rejected and accepts H1 which states that there are differences in learning outcomes between students who take lessons using Kvisoft Flipbook Maker based digital books with students who take lessons without using Kvisoft Flipbook Maker based digital books.The mean of experiment group was 84,56 and mean of control group was 70,32.

CONTENT DEVELOPMENT OF FLIPPED CLASSROOM-BASED FOR MICROTEACHING COURSE

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Abstract. This research was purposed to develop and generate a flipped learning based instructional media for the Microteaching course, to improve students' concept mastery and teaching skills. ADDIE was used as the research method to achieve the goal of this research, which consist of 1) analysis, 2) design, 3) development, 4) implementation, 5) evaluation. In the first step, the analysis of the system needs and the analysis of TIU/TIK on the microteaching course based on the syllabus. In the second step, the design of flipped classroom based microteaching content systematics and the design of system, database, and interface were carried out. In the third step, the development step was the following step of all that had been designed. The arrangement of microteaching content followed the syllabus and the integration into the learning management system by using Moodle. The implementation step was to insert the microteaching content into Moodle as the platform. In the evaluation step, several tests were carried out on the expert, including design expert, content expert, and media expert.

WORK SYSTEM METHOD AS AN E-LEARNING DESIGN FRAMEWORK IN PRIVATE UNIVERSITIES

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Abstract. The development of information and communication technology, especially the internet, provides opportunities to improve the ability of lecturers to deliver courses to students without being limitated by distance and time by utilizing e-learning which will accelerate the transfer of knowledge and skills. E-learning is distance education that utilizes various digital tools and platforms. Tools and platform to support interaction, lectures and delivery of instructions between lecturers and students. This study will discuss the use of work system methods to design information systems and the use of e-learning technology in a business entity that serves lecturers and students, conduct lectures at private universities in increasing knowledge dissemination, educational affordability and the use of technology and information as its support. The result of this research is the works system method model which refers to the analysis of data from the internet accessibility survey of students, analysis of its components, the system development cycle, the revision of the vision, mission and resources in private universities and recommendations of opportunities for the development of higher quality e-learning implementation.

ROAD EXTRACTION IN SATELLITE IMAGE WITH FUZZY C-MEAN

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Abstract. Algorithm Fuzzy C-Means is a data grouping technology where the level of data presence in a class or cluster is determined by the degree of membership. The-based image segmentation clustering in this study uses the Fuzzy C Means method, to obtain a more optimal cluster center. Preprocessing applied to the test image used in the proposed method is gradient operation. System evaluation uses two approaches, namely by measuring the value validity cluster. The test results show that the FCM-Means algorithm produces better segmentation And the results of the clustering produce colors on the road . The value of each pixel will be limited to the value 0 or the value 1 in the binary image. In this Fuzzy C-Means algorithm, each object / data can be a member of several clusters.

ANALYSIS OF E-LEARNING USER SATISFACTION ITB STIKOM BALI USING END USER COMPUTING SATISFACTION (EUCS) METHOD

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Abstract. The development of internet technology has spurred the emergence of various new applications that support activities in various fields, including in the field of education such as e-learning. ITB STIKOM Bali has its own developed e-learning system. In e-learning, there are several navigation menus such as course information, meeting descriptions, file uploads, discussion activities and others that are prepared for students as users. This study aims to determine the level of satisfaction of e-learning users. The level of satisfaction was measured using the End User Computing Satisfaction (EUCS) method involving 177 students as respondents who were randomly selected. The data collection method in this study used a questionnaire. From the results of the analysis of the data that has been collected, the following results are obtained: Based on the results of the calculation of the average level of satisfaction, the value is 4.54 on the content variable, the accuracy variable is 4.48, the shape variable is 4.53. on the timeliness variable, the score was 4.5, the user convenience variable scored 4.51, and when combined with the satisfaction level according to Kaplan and Norton, it could be concluded that the level of user satisfaction with e-learning was included in the very satisfied category.

DESIGN OF AUTOMATIC THREE PHASE LOAD BALANCING FOR DYNAMIC ELECTRICAL INSTALLATION

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Abstract. This paper discusses design and simulation of Automatic Three Phase Load Balancing in three-phase electrical installations in consumers with single-phase loads. This approach is a solution to many constraints of load imbalance that is installed three-phase source on the consumer. The process of changing the installation and adding loads is very difficult to do manually. This load imbalance causes one phase voltage source to be overloaded while the other voltage sources are still very little loaded. An implementation of an automatic system makes the electrical installation dynamic so that changing installation and adding new loads will be very easy to do. This Automatic Three Phase Load Balancing consists of two types of control that communicate with each other, namely a Central Controller and Controller Units. The Central Controller functions as a data processor for overall loads. Several Controller Units function as a connection switch between phases in each load group. From the simulation results with MATLAB Simulink, this system can manage the loads so that a balance is achieved in each phase. The more the number of load groups in an electrical installation, the better the load balance is obtained.

THE DESIGN OF THE CSE-UCLA EVALUATION MODEL USING TOPSIS AND AHP METHODS FOR OPTIMIZING DIGITAL LIBRARY SERVICES IN BADUNG REGENCY

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Abstract. As a public service, PustakaGita digital library should be able to offer excellent service quality. The Regional Archives and Library Office of Badung Regency must optimize the services it provides in order to achieve excellent service quality. In its implementation, the office encountered difficulties in prioritizing aspects of services that require optimization. The purpose of this study was to design a Center for the Study of Evaluation-University of California in Los Angeles (CSE-UCLA) evaluation model using Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) and Analytical Hierarchy Process (AHP) to provide recommendations on which aspects of services need to be optimized. The research method used stages that included problem identification, problem formulation, literature review, data collection, data analysis, design, and conclusions. The TOPSIS and AHP methods had the ability to rank a variety of aspects in the CSE-UCLA model. That aspects used five service criteria: tangible, reliability, assurance, responsiveness, and empathy, all of which were classified in the "benefit" category. Each criterion had a value of 0.2, 0.2, 0.2, 0.2, 0.2 for the weight values for system assessment, program planning, program implementation, and program improvement, while for program certification: 0.556, 0.111, 0.111, 0.111, 0.111, respectively.

RINDIK ROD SOUND SEPARATION WITH SPECTRAL SUBTRACTION METHOD

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Abstract. Rindik is a traditional music instrument originated from Bali that consists of 11 bamboo rods and played by a person hitting the bamboo rod with a rubber mallet in each player's hands. Documentation of Rindik songs with automatic music transcription work is easier to do by separating it first. To overcome that challenge, two Rindik rods sounds are separated using the spectral subtraction method. The noise spectrum is the spectrum of a single rod sound that needs to be muffled. The resulting audio is the other single rod sound and vice versa to get both single rod sound. The data consists of single rod hit sound recordings of 11 single rod sound and 55 combinations of two-rods sounds that being hit at the same time. The performance of the spectral subtraction method in separating Rindik sound was measured with MSE and SIR and also heard the noise exists in the separated audio signal. The experiment demonstrates a state-of-the-art performance consists of spectral subtraction with squared noise average magnitude with average MSE value 0.0130 and average SIR value 55.68 dB.

EVALUATION INSTRUMENT TESTING OF CHANGE AGENTS IN DENPASAR HIGH COURT WITH STAKE MODEL

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Abstract. Evaluation is important for improvement or performance improvement of a process or activity. Evaluation activities were carried out at the Denpasar High Court. One of the evaluation activities is determining the agent of change. The determination of the agent of change at the Denpasar High Court was carried out through a selection process. This selection process uses 10 criteria. Currently, the process of selecting or determining agents of change at the Denpasar High Court is still being carried out manually and some of the criteria are not based on physical data or documents. Based on this, it is important to evaluate the criteria for determining agents of change. To simplify the evaluation process, this research uses a stake evaluation model. In the evaluation process using instrument assistance. The instrument also determines the success of the evaluation process. To produce a good instrument, it is necessary to test the instrument. Therefore, this research conducted an instrument test in the form of a test on the validity and reliability of each question item on the instrument. The purpose of this research was to determine the level of validity and reliability of the instrument of evaluation of agents of change at the Denpasar High Court using a stake model. The method used in this research is a quantitative approach method. The test tool used is a questionnaire. Respondents in the research were 15 people who were agents of change and evaluators. The analysis technique used to test validity is the product-moment correlation. While the reliability analysis used Cronbach Alpha. The results of this research were an instrument of evaluation of agents

of change at the Denpasar High Court with a stake model. Based on the results of the validity test, it was found that 21 instrument items were valid. Based on the results of the reliability test, it was found that all instrument items were reliable, so it can be concluded that this instrument is ready to be used as an evaluation tool for agents of change at the Denpasar High Court with the Stake Model.

THE PRINCIPLES OF BLENDED LEARNING DESIGN WITH HEUTAGOGY APPROAC THOURGH E-GANESHA MOODLE IN INDONESIAN LANGUAGE LEARNING

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Abstract. This study aimed to discover the principles of blended learning design with a heutagogy approach thourgh e-ganesha moodle. The research design used was a qualitative design with Design Based Research (DBR) method. The subjects of this study were students, lecturers, and education experts. The research setting was Indonesian language subject at the Ganesha University of Education. The data collection method used were observation and interviews, while the data were analysed by using the technique proposed by Miles and Huberman. The results showed that there were 8 principles of blended learning design with a heutagogy approach, including (1) the curriculum was open or flexible so that it could be adjusted to the characteristics of students; (2) Learners acted as drivers in determining learning paths, activities, and contents; (3) Preparation of students before the curriculum discussion needed to be done by sending materials before discussions related to learning activities were carried out; (4) Educators acted as facilitators to assist students in increasing self-efficacy; (5) Students were involved in the design of the assessment that was enforced and had flexibility by looking at the existing situation; (6) Synchronous and asynchronous modes occurred individually or collaboratively; (7) Synchronous and asynchronous modes by looking at the involvement of technology and the independence of students could be divided into 6 learning mode designs, namely (a) face to face, (b) face to face tutorial, (c) virtual face, (d) full instruction and content, (e) semi instruction and content, and

(f) independent learning; and (8) Reflecting on learning to increase self-efficacy.

STUDENT-CENTERED LEARNING MODELS AND LEARNING OUTCOMES: META ANALYSIS AND EFFECT SIZES ON THE STUDENT THESIS

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Abstract. A meta analysis of students' thesis is very necessary to improve the quality of research in maintaining the consistency and scientific truth justification of the theory. This study aims to (i) obtain an *effect-size* estimation which is the strength of the relationship between the variables studied in a quasi-experimental study; (ii) describe the effectiveness of student-centered learning models compared to teacher-centered learning on learning outcomes; (iii) describe the conditions that affect the effectiveness of the student-centered learning models in the final assignments of students of Informatics Engineering, Universitas Pendidikan Ganesha. In order to achieve this goal, 22 students' final assignments were reviewed as research samples. The study is focused on two things, namely, (a) calculating the effect size of each sample of thesis; (b) examines the theoretical and empirical justification used to discuss the acceptance of the hypothesis. Statistical analysis techniques are used to determine the value of the effect size. The results showed that, the effect-size value for the entire sample was 1.109 in the high category, and the results of the study of the t value for all the thesis studied showed that all t-count values were greater than t-table values at a significant level of 0.05. This means that student-centered learning models are better to teacher-centered learning models on the learning outcome variables studied.

THE IMPACT OF EXTERNAL KNOWLEDGE ON ORGANIZATION PERFORMANCE WITH INDIRECT EFFECT OF INSTRUCTIONAL AGILITY AND PROCESS INNOVATION EFFECTIVENESS

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Abstract. Engaging industry in Vocational High School (VHS) policy outcomes not only offers awareness of market needs, but also enables industries to influence learning and teaching methods and courses across the overall VHS. This study indicates that external knowledge leads to the feasibility of instructional agility, and process innovation effectiveness, resulting in success of VHS. This study looks at structural equation modeling (SEM) analysis based on empirical data obtained from 129 vocational high schools in Bali Province, Indonesia. The study aimed to concentrate explicitly on how the impact of external knowledge on VHS achievements in Indonesia is mediated by instructional agility, and process innovation effectiveness. The study shows that external knowledge has no influence on VHS performance, while improving VHS performance indirectly through all instructional agility and effectiveness of process innovation.

DEVELOPING HOME HEALTH CARE APPLICATION TO PATIENT DURING THE COVID19 PANDEMIC

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Abstract. The culture of *"Priyayi"*/ being happy to be served in Indonesia in a social context really encourages start-up developers to develop products. In addition, the Covid19 pandemic has made people anxious to visit hospitals or *"Puskesmas"* (Community health care service). The development of home care applications is prospective in Indonesia, especially in Singaraja Bali, because it greatly assists the community in getting health services at their homes so that it is safer and more comfortable than queuing for services at hospitals and clinics. This research is descriptive qualitative, applications developed using the Agile method. The data obtained from observations, interviews and previous scientific research and study. Based on the results of interviews, 80% of respondents wanted the development of this application. Furthermore, the result of Alpha testing showed that the system can run well. Usability Testing Process using the System Usability Scale (SUS) questionnaire with 20 respondents resulted in a Good value (65,125) so that this application is in accordance with the needs of people who want to get health care at home during the Covid19 pandemic.

A FEASIBILITY STUDY OF SENSOR AND TRANSDUCER TRAINERS AS A LEARNING MEDIA FOR ELECTRONICS ENGINEERING STUDENTS

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Abstract. The aims of this research is to determine the feasibility of sensor and transducer trainer as a learning media which is applied to Electronics Engineering students of FT UNM. The feasibility indicators used in this study are divided into 3, namely feasible in terms of material, media, and responses from the students as users of this media trainers. The method applied in this research is Research and Development (R&D) by developing a sensor and transducer trainer. The data analysis technique that used is descriptive statistical analysis. The instrument used in this study was a questionnaire with targeting 4 lecturers as a media and material experts, while there are 27 students as a respondent. The assessment results from the material expert validator are obtained an average value of the feasibility percentage of 97%, while the assessment of the media expert received an average value of 96%. Based on this assessment, the media trainer is worthy of both the content of the material and its performance. Meanwhile, the value of student responses to the use of trainers after being tested reached 84% with a very good category. The results of the feasibility test generally show that this trainer can be used in practical learning in the sensor and transducer course. This trainer can be developed with the addition of IoT (Internet of Things) technology to perform remote monitoring and control systems.

DEVELOPMENT OF IMAGE BASED INTERNATIONAL BRIDAL MAKEUP COURSE TEXTBOOK FOSTERS LEARNING INDEPENDENCE OF BEAUTY STUDENTS

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Abstract. The purpose of this study was to develop textbooks for international bridal makeup courses based on images and to see the feasibility of textbooks based on the responses of material experts, instructional media experts and indicators of textbook use for Beauty students. By adding pictures to textbooks, it is a solution to increase student learning independence. The type of research used is research and development research and development (R&D) by adapting the DDIE development model which consists of Analysis, Design, Development, Application, and Evaluation. Textbook validation is carried out by learning material experts and learning media experts. The research subjects were students of the Family Welfare Education Study Program with the Concentration of Beauty Care. The assessment instrument used a questionnaire and was analyzed descriptively. The result of the research is the development of an image-based International Bridal Makeup course textbook with the ADDIE model according to the steps and the textbook is feasible to use based on the learning material expert's plan with a score of 94.1% and the learning media expert's response with a value of 91.1%. While the field test on students got a score of 93.4%, which means that picture-based textbooks can foster independent learning for beauty beauty students.

DEVELOPMENT OF E-LEARNING CONTENT IN EDUCATIONAL PROGRAM EVALUATION COURSES

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Abstract. This study aims to develop learning products that can be used to overcome some of the problems that exist in the Education Program Evaluation course at the Masters level education, namely creating content that can be applied or applied to the e-learning platform of the Ganesha University of Education, so that learning activities can be assisted by the use of technology and to find out the feasibility of the content that has been created. The method used in this research is the ADDIE model method which consists of Analyze, Design, Development, Implementation, and Evaluation. The type of data in this study is quantitative data or data presented in the form of numbers. The instrument used in data collection was a questionnaire in the form of a questionnaire. The percentage result of the evaluation of the content expert test of the learning material was 98.07% or stated "Very Good". The results of the assessment by instructional media experts, e-learning learning content obtained a percentage of 93.05% which when converted states that the learning content applied to e-learning media is "Very Good". The results of the target test assessment stated that the e-learning learning content was "Very Good" with a percentage of 93.2%. Based on the results of this assessment, the e-learning learning content is declared suitable for use.

ANALYSIS OF JEJAK BALI VIRTUAL CLASS USES USABILITY TESTING, CONCURRENT THINK ALOUD TECHNIQUES AND PERFORMANCE MEASUREMENT TECHNIQUES

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Abstract. Jejak Bali is a website created specifically by PUSTEKKOM in managing learning activities so that the Bali Provincial Education Office can carry out supervision and guidance for e-learning learning in Bali. There are still many obstacles experienced by teachers and students when using the Jejak Bali so that it encourages the design of a study, looking at the usability of a system from a user perspective to increase user satisfaction. So that the method used is usability testing technique Concurrent Think Aloud and Performance Measurement which measures the effectiveness, efficiency, and user satisfaction. The population in this study were teachers and students from SMAN 2 and SMKN 3 Denpasar. In measuring Performance Measurement and CTA, the sample consisted of 40 teachers and students, andusers used the questionnaire SUS 86. The results of the research are (1) Jejak Bali for Teacher and Student users is still ineffective because there are still errors made while doing the assigned assignments, (2) Jejak Bali which are seen from the time when teacher and student users are working are still inefficient because of differences. significant time from the advanced group to the beginners, (3) Jejak Bali still does not meet user satisfaction seen from the results of the SUS questionnaire recapitulation with a teacher score of 49.0 and a student with a score of 48.3. Because the value obtained is below

60 in the percentile rank. So it can be concluded that Jejak Bali still does not meet usability good as seen from the results obtained.

SMART SCHOOL STRATEGIC DESIGN FOR INFORMATION SYSTEMS USING FRAMEWORK WARD & PEPPARDIN SMK NEGERI 1 TAMPAKSIRING

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Abstract. Vocational School (SMK) is a formal institution specifically aimed to produce graduates who are ready to work in business and industry. Thus, all attempts are made to meet that goal. One of the attempts particularly made by SMK Negeri 1 Tampaksiring is by improving the quality of the human resources through IT implementation during learning process, equipped with necessary updated information system and other supporting facilities. To be a smart school, integrated planning, or blue print, in regard to school information system becomes a necessity in order to be aligned with the vision, mission and objective of SMK Negeri 1 Tampaksiring. For that background, model design Ward and Peppard is applied to analyse school internal conditions and activities inside the school. For analysing purposes, some tools are used namely SWOT analysis, value chain analysis, five force factor analysis, McFarrland Grid, and Critical Success Factor (CSF) analysis. Analysis results of the tools result in the recommended formation of Information and Communication Technology (ICT) and IT strategy required to design Local Area Network (LAN), e-Learning, and Aplikasi Buku Point in its preliminary stage for the success of SMK Negeri 1 Tampaksiring to be a smart school and for being SMK Negeri 1 Tampaksiring's guideline in the future.

SOCIAL MEDIA AS INTEGRATED CHARACTER EDUCATION MEDIA

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Abstract. Character education in schools is carried out in an integrated manner in all subjects. Integrated character education involves the school, family, and community in its implementation. The very few communication opportunities make the implementation of integrated character education involving families and communities difficult. Through this opportunity, we tried to introduce social media to be used as an integrated learning media for subjects and character education. The teacher can provide material and assessment to students and students can learn and submit assessment completion through the media. In addition, students can also place all of their work in a folder prepared for each student to accommodate their portfolios. Teacher-student communication and student-student communication can be done through groups or private chats. Such a mechanism is able to monitor student learning progress and at the same time train students' courage to express opinions, collaborative skills, responsibility, respect for other people's work, and independence. It's just that, to increase honesty and independence, social media has not provided satisfactory results because during the implementation of tests that must be done independently, students often exchange answers. These findings can be used as a reference for finding techniques around the use of social media in practicing honesty and independence.

APPLICATION OF PARTIAL CREDIT MODELS IN TESTING PERFORMANCE ASSESSMENTS FOR PROGRAMMING COURSE

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Abstract. The assessment of programming skills must be able to measure holistically the theoretical abilities and programming skills. Performance assessment is seen as an appropriate assessment to measure programming ability because it is able to evaluate authentic ability through the process carried out or the product produced. The problem that often arises is performance assessment testing to measure programming capabilities. On this occasion, the Partial Credit Model (PCM) was tried to test performance assessments to measure programming capabilities. PCM is a development of the Rasch model which both applies one parameter, namely the item difficulty index. If the Rasch model is applied to dichotomous items, then PCM is applied to politomic items. PCM assumes that all items have the same difference power. The category score on the PCM shows the per-step score for correctly completing the item according to the scoring rubric developed. The probability of each test taker is estimated by calculating the probability of answering each step in completing an item. There are five items that were tested in two parallel classes in relatively different times. The test results showed a difference in probability in the two classes, but the difference was not too far away. So, the performance assessment is precise enough to measure programming capability, and the test results are quite precise when tested with PCM.

DEVELOPING PROJECT BASED E-LEARNING CONTENT FOR BASIC COMPUTER SYSTEM COURSE

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Abstract. This study aims to develop E-learning content for the basic computer system course trough project based learning model. The present research was research and development by using the Dick & Carey Model. There were five stages of development in the present research, namely: determining the course as object of the development, needs analysis, developing a draft, running the Undiksha E-learning software, and testing (content expert reviews and field trials). The result of the development was positive. It means that the content can facilitate lecturers and students during teaching and learning process. The content was also able to improve students level of mastery of basic computer systems material. Both Students and lecturers were not limited by place and time because E-learning content of the Basic Computer System course can be accessed anytime and anywhere.

REVITALIZATION OF DADONG DAUH BALINESE CHILDREN'S ILLUSTRATED SONG INTO 2-DIMENSIONAL ANIMATION AS AN EDUCATIONAL TOURISM STRATEGY

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Abstract. This study produces animated video clips that are revived from Balinese children's songs as an alternative media, by promoting brand equity in the form of characters and popular tourist attractions as an effort to promote cultural tourism in Bali, Indonesia. The strategy in reviving children's songs is to revitalize the visualization of Balinese children's illustrated songs. The visualization in question is changing the previous appearance of live action appearance into an animated form that proved to be preferred by children. The design of the Dadong Dauh character is constructed by manga matrix system model approach, which was introduced by Tsukamoto. The data collection about song variation of Dadong Dauh and theory to develop imagery character and to design the charater by using the manga matrix system was used by conducting a literature study. Reference collection of the visual of Dadong Dauh was used by conducting a literature study and observation. The result showed that the revitalized video clip of local Balinese children songs in a two-dimensional form made

it possible to revitalize the character branding of Dadong Dauh as a cultural symbol, with Tenganan village as its cultured environment, as it got great appreciation from children and has potential to popularize Dadong Dauh song.

ANALYSIS OF THE UTILIZATION OF BALI LOCAL CULTURE AS LEARNING RESOURCES IN DESIGNING DRAPPING COURSES IN THE FAMILY WELFARE EDUCATION STUDY PROGRAM UNDIKSHA

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Abstract. The purpose of this study is (1) to analyze the local Balinese culture which is used as a learning resource by students in designing clothes in the Draping course, and (2) to analyze the clothing designs produced by students in the Draping course by utilizing Balinese local culture as a learning resource. This type of research is a qualitative descriptive study. The research subjects were 12 students of the Family Welfare Education Study Program with the Concentration of Dressmaking who had taken the Draping course. The assessment instrument used an observation sheet and was analyzed descriptively. The results showed the local Balinese culture which was used as a learning resource by students in the form of works of art and traditions: 67% of the clothing products produced by students are included in the very creative category and 33% are included in the creative category in utilizing Balinese local culture as a source of learning.

DOUBLE EXPONENTIAL SMOOTHING BROWN METHOD FOR SALES FORECASTING SYSTEM WITH A LINEAR AND NON-STATIONARY DATA TREND

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Abstract. UD Parama Store is a trading company engaged in the sale of retail goods that sell various types of daily necessities retail. Problems that occur are the difficulty in predicting sales due to the level of maturity of experience, changes in customer demand, and limited memory of the owner so that there is a buildup of merchandise stock when there is a decrease in sales or a shortage of stock when there is an increase in sales. In this research, a sales forecasting web-based system is designed and built which aims to assist the owner in predicting the number of sales in the next period so that decisions can be made in determining the amount of goods to be provided. Forecasting method used is double exponential smoothing brown that is by improving forecasting by averaging (smoothing) the past value of a time coherent data by decreasing (exponential) which requires only one parameter and is used for data that contains a tendency to increase or decrease linear and non-stationary data. Based on the calculation of forecasting accuracy using the MAPE (Mean Absolute Percentage Error) method in forecasting sales of merchandise, it produces the smallest error rate ranging from 7.99% to 32.42% for 10 different items.

IMPACT OF COGNITIVE STYLES ON STUDENTS' PSYCHOMOTORIC ABILITIES ON MULTIMEDIA COURSE PRACTICUM

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Abstract. Cognitive style refers to the way a person processes, stores or uses information to respond to a task or respond to different types of environmental situations. How students collect information and use the information that has been collected can be used as a means to respond to the learning process in the classroom. The purpose of this study is to determine the relationship of a student's psychomotor abilities to a student's cognitive style, an analysis of the relationship between the two variables is required. Through this research it will be scientifically known how much cognitive style contributes to a student's psychomotor abilities. Sample in this study is an Informatics Engineering Education student who took Multimedia Technology courses. The data is analyzed with descriptive statistical analysis and inference statistical analysis. The results of this study show that the cognitive styles of dependent fields and independent fields both affect significantly.

THE DIGITAL STRATEGIC PARTNERSHIP OF COVID-19 PANDEMIC IN THE PERSPECTIVE OF NATIONAL RESILIENCE IN INDONESIA

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Abstract. Indonesia became one of the countries infected with Covid-19 after the President announced it publicly on March 2, 2020. The two patients infected with Covid-19 reside in West Java, namely in the city of Depok. A solution model is needed during a pandemic, not only because of Covid-19, but also to anticipate a pandemic in the years to come. The theories used are the theory of the information society, the theory of covid-19, and the theory of the public private partnership. While the methodology used is qualitative. The results of the research are how to find solutions and also in the form of views in the form of a solution model with mutual synergy. Given that this pandemic will end, we need a multidisciplinary approach, one of which is from the perspective of national resilience.

FORECASTING FOREIGN EXCHANGE RATE USING A COMBINATION OF LINEAR REGRESSION AND FLOWER POLLINATION ALGORITHM

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Abstract. Several currencies exist in the world. Each currency will have value. The currency exchange will go through a conversion process to adjust the amount. Each currency value can fluctuate based on the conditions of the currency area. The fluctuating changes in value provide profit opportunities. Maximizing profits can make forecasts so that the right decisions are made. One of the forecasts can use regression. Regression is capable of forecasting based on historical data. The regression in this study will be optimized using the Flower Pollination Algorithm (FPA). The use of the Flower Pollination Algorithm (FPA) aims to obtain appropriate parameters for regression to reduce forecast errors. The data in this study were obtained utilizing extraction from the Meta trader application. This data will be the basis for the system learning stage and the testing phase. Obtaining a good hyperparameter can make the forecasting system closer to the actual value. Good system accuracy can be a trader's supporting data in making transactions. Forecasting in this study uses the parameter 5 window sizes, 20 population sizes, and 0.7 probability switch. This experiment resulted in MSE 0.0331 and RMSE 0.1756. This forecasting has sufficient results to support a trader's decision. Further research is needed to improve accuracy and determine the direction of the forecast to improve this research.

GAMIFICATION DESIGN FOR HIGH SCHOOL STUDENT WITH UNSTABLE INTERNET CONNECTION DURING COVID-19 PANDEMIC

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Abstract. Bali is one of the islands located in Indonesia, which is famous for its natural beauty. Bali also has a unique culture, a special attraction for tourists. The majority of Balinese are Hindu. Hinduism is not only about divinity but also about traditions, manners and moral values. So it is very important to be taught from an early age. In schools students also get Hindu religious lessons, starting from elementary school (SD) to senior high school (SMA). Since the spread of the corona virus (COVID-19) in Indonesia, and more and more people have been infected with the corona virus. To prevent the spread of the corona virus from spreading, the government closed schools. Students are required to study online from home with all the limitations that exist. Teachers who do not understand using technology, unstable internet access, use of large internet quotas, and students do not have adequate electronic devices. The internet connection is often unstable, causing tasks that are received or sent are often late. In addition, online learning causes almost no interaction between teachers and students. So that the involvement and motivation of students to learn decreases. The methods that can be used to increase student motivation and student involvement is gamification. Marczewski Gamification Framework can be used to design gamification in Hindu religious subjects. In this study, the achiever user type is used. In this research uses 3 game mechanics, Level / Progression, Quest / Challenges, Achievements / Rewards.

DEVELOPING ARTICULATE STORYLINE 3 BASED LEARNING OBJECT IN SUPPORTING (SPADA) INDONESIA ONLINE LEARNING

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Abstract. This study aimed at creating a learning object design based on Articulate Storyline 3 in supporting the Indonesian Online Learning System (SPADA). The method of the present research is development (research and development), using the ADDIE Model. ADDIE Model development design was combined with the AGILE Method to develop learning tools. The expected benefit from this research is being able to integrate learning objects with other learning objects at SPADA Indonesia. The development stages were determining the course to be developed, needs analysis, developing draft, utilizing the Universitas Pendidikan Ganesha E-learning software, and testing (a review from content expert and field testing). The results of the learning object design can help and facilitate lecturers and students to carry out the lecture process better and be able to increase the level of mastery of the subject matter. Students and lecturers would not be locked up by face-to-face meeting and time. Based on the validity test conducted by media, design and content experts, it could be said that the AS3-based learning object designs was "Very Valid" and could be used for lecture process.

MANIK ANGKERAN STORYTELLING BASED ON ANDROID MOBILE TAP GAMEPLAY

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Abstract. This research objective is structured to solve the problem of how to present a Balinese popular folk tale as an educational strategy through a mobile game with easy-to-play gameplay. This study has 3 (three) main objectives i.e.: (1) Building the Manik Angkeran story which is the development of the story of the Origin of the Bali Strait circulating in Balinese society, Indonesia; (2) Realizing the Manik Angkeran game that highlights Balinese characteristics; (3) Implement easy-to-play gameplay. In developing the original story of Manik Angkeran, the strategies carried out were: (1) Building a new story with the main character Manik Angkeran which is a continuation of the original story of the Origin of the Bali Strait; (2) Balinese characteristics are highlighted in character design, game background, and background music in fighting scenes; (3) The chosen gameplay is tapping the game with the consideration of simplicity and ease to do. The results of this study are Manik Angkeran Game with Tap Game genre based on Android. This game requires players to tap on the screen to move Manik Angkeran, with a mission to defeat the enemy / monster to collect gold coins (Pis Bolong Mas). Later, these coins are used to buy building materials, which will be used to build dormitories (*Pasraman*). The test results using the BlackBox Testing method show that the functionality of the navigation buttons and the entire functions of the game are running well as desired. For the results of testing the game on several different screen resolutions, the result shows that the display of this game is able to adjust on different screen resolutions and the image display remains sharp. This game is also capable of running on a minimum Android device v.3.0 HoneyComb,

until the latest version at this time is v.9.0 Pie. Research disclosure starts with the Introduction, which reveals the background and purpose of the study. Furthermore, the discussion swooped over to the research method used. The process of pre-production, production to post-production is a model or technique used in making games. The results revealed the evaluation of the black box to test the readiness of the system. The presentation concludes by telling conclusions.

USABILITY TESTING AND THE SOCIAL ANALYSIS ON ONLINE COUNSELING SYSTEM FOR RECOMMENDATIONS IN TECHNICAL VOCATIONAL SCHOOLS

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Abstract. With the abundance of vocational school in Indonesia, there should be plenty of jobs available and the number of unemployment is decreasing. The purpose of this research is to help schools to assist students in choosing major courses that suit their skills ans interest. It is make students feel joy to participate in the learning process and in the end they understand the lesson well. Placement test is needed to determine the prior knowledge of new students so that they can easily be directed to the appropriate courses. The results of the test are analyzed for a basis to conduct counselling to students. This research was developed by using the R&D method and the final product is computer application. This application was tested at SMKN Bali Mandara. The results showed that the application can help students to choose major courses that fit their interests, may use the results of the test result as the basis of counselling. It needs to be tested again regarding its usability by using the System Usability Scale (SUS) to measure

the level of user satisfaction. The test results in the range of 66,125, this means it is good.

THE UTILIZATION OF LADY FINGERS BANANA FLOUR INTO CAKE AS CREATIVE PRODUCT, AS A WAY TO EMPOWER THE LOCAL INGREDIENTS

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Abstract. This research aims at creating good quality cake made of lady fingers banana flour as a way to support the empowerment of local ingredients as well as the endurance of the food. The target of this research is to gain a variation of cake made of lady fingers banana which has good quality standard formula. Meanwhile, the specific targets are: (1) gaining an accurate formula of lady fingers banana cake, (2) gaining the quality of lady fingers banana cake seen from its volume, pore, aroma, texture, and taste through organoleptic test, (3)gaining feedback about the society's taste towards the lady fingers banana cake. The data was obtained by observation using quality test observation sheet (organoleptic test) to 5 expert panelists and the taste test observation sheet to 15 people in the society. Then, the data was analyzed descriptively. The result shows that (1) the formulation of 75 % lady fingers banana flour is the best formulation for standard recipe of making lady fingers banana cake, (2) the variation of lady fingers banana cake has organoleptic quality in the rage of good in the aspect of volume, pore, aroma, texture, and taste, (3) the society likes the product of lady fingers banana flour from the aspect of volume, pore, texture and taste. Meanwhile, society shows that they quite like the aroma of lady fingers banana cake.

ADAPTATION STRATEGY OF AUTHENTIC ASSESSMENT IN ONLINE LEARNING DURING THE COVID-19 PANDEMIC

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Abstract. The crisis caused by the Covid-19 virus has a far-reaching impact on education, as schools have been closed since March 2020 in many countries around the world. However, despite certain limitations, the current situation demands action so that the educational process for students around the world is not affected at all, including in terms of Assessment. To be effective, assessments must be active and authentic in online education. The problem is, until now, and there has been no instructional design in carrying out authentic online assessments. Thus, this study aims to create an authentic assessment strategy adapted from the current implementation. In general, the method used in this research is development research compiled through surveys and developed qualitatively. The results show that the forms of Assessment that can be done include: doing a written test with case study questions or analysis provided in the online platform. Online discussions with peer assessments as well as Assessment of activeness by teachers, writing papers and analyze case studies including conducting reviews and criticisms. In principle, online teaching and learning can be delivered either asynchronously or synchronously. In the asynchronous assessment method, which is not done in real-time, assignments, and portfolios can be used to

assess knowledge and skills. The synchronous assessment method is carried out in real-time face to face online.

EFFECT OF PROBLEM-BASED LEARNING ON CRITICAL THINKING SKILLS

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Abstract. Students' critical thinking skills are not can develop appropriately if, in the learning process, the teacher does not actively. Therefore, to improve students' critical thinking skills, a teacher should choose and use strategies, approaches, and methods techniques that involve students actively in learning, both in manner mental, physical, and social. One alternative learning that provides opportunities for students to develop students' critical thinking skills problem solving is problem-based learning. Research is a research study literature examining related journal application of problem-based learning to improve critical thinking skills. The findings of this study include: (1) the implementation of PBL has the potential to help students motivate and provide learning experiences; and (2) PBL implementation is very useful in improving students' critical thinking skills, provided that teachers and students can apply each stage of PBL well.

STUDENTS' PERCEPTIONS OF ONLINE LEARNING IN TEACHER TRAINING AND EDUCATION FACULTY

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Abstract. This research aims to describe students' perceptions of online courses. In this research, the researcher used a survey approach. The data collected using a questionnaire that distributes by online form. This research used a public opinion survey that classifies of purpose-based classification. The researcher made the five-stage model, according to the theory of Salmon. Stage 1 found that the most of respondents had access the Internet for study (44.6%) and capably using the keyboard (45.5%) or compose text on a computer/gadget (46.7%), but they lack motivation in online learning (93.4%). Stage 2 involves individual participants establishing online socialization, the respondents felt uncomfortable doing communication by online (80.1%), but they were still active in the online classroom in interaction with lecturers (96.4%). After that, the data shows they like working in a group in offline (75.3%) rather than online class (47.3%). At stage 3 related to information exchange, the respondents need to review the material (84.2%) due to remind the advanced material, make a priority to manage self-disciplined (65.2%) and time effectively (71.4%). At stage 4, course-related group discussions develop, and the interaction becomes more collaborative (knowledge construction). In online learning, the respondents preferred to work independently (67.8%) rather than in groups (47.3%) or collaborate (52.7%) during learning activities. Stage 5, about the experience in offline and online, had a benefit to studying. The similar results about

students' motivation, they lack motivation and assumed that offline and online learning activity were different situations and goals.

TRAINER AND REMOTE LAB DESIGN USING INTERNET OF THINGS (IOT)

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Abstract. This research aims to design and produce a learning media of Trainer and Remote Lab based on Interne of Things (IoT) which can be used in learning in the era of the industrial revolution 4.0. This research method is Research and Development (R&D) with several stages, namely Requirement, Design, and Coding & Testing. The Requirement stage is implemented by doing a communication and interviews with lecturers and students, this activity intends to understand the conditions of the learning media used in the laboratory. The design stage is carried out by preparing requirement specifications by creating an IoT Trainer and Remote Lab IoT system design architecture. While the Coding & Testing stage was applied by coding Fire base, Remote Lab, and Arduino (NodeMCU). Testing is applied on students and lecturers to check the connectivity and system failures. The results of this study are in the form of IoT (Hardware) trainer learning media using NodeMCU and Remote Lab IoT as a software of Android application. After testing the product 21 times, a very good level of reliability was obtained, reaching 93.33%, thus the IoT and Remote Lab Trainers are suitable for use as distance learning media.

DEVELOPMENT OF 21ST CENTURY SKILL LEARNING DESIGNS THROUGH THE APPLICATION OF THE CONCEPT OF INDEPENDENT LEARNING IN THE VOCATIONAL FIELD

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Abstract. This research aims to develop 21st Century skill learning tools through the application of the concept of independent learning curriculum for independent campus in the vocational field, as the implementation of the policy for independent learning towards an independent campus by the Ministry of Education and Culture in 2020. This research was conducted using the research and depelopment method with steps to define, design, develop and disseminate. To determine the feasibility of the resulting learning device, a validation was carried out using the Gregory formula by using two experts, namely learning technology experts and vocational education experts. Furthermore, improvements are made from the results in the form of suggestions and input from experts. The results showed that the learning device for the independent learning curriculum concept course was declared valid and applicable, so it was very feasible to be used to support the implementation of courses that supported the independent learning policy for independent campus.

DEVELOPMENT OF PREPAID WATER METERS BASED ON AT89S52 MICROCONTROLLER

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Abstract. A prepaid water meter is a device for controlling the volume of customer water usage with a water pulse system. Currently, the prepaid water meter implements a card system as a storage area for customer water pulse data by filling it via a keypad. This research aims to develop a prepaid digital water meter using EEPROM memory as a storage area for customers' water pulses by filling it with a remote control based on the AT89S52 microcontroller. The research method is carried out by developing hardware and software, as well as testing the overall system performance. The results showed that the prepaid water meter system has worked well to control the work of the solenoid valve in adjusting the volume of water consumption according to the number of water pulses in the EEPROM memory. Also, the system has worked well in the process of recharging water pulses on prepaid water meters via remote control.

ALKIN BASED ON SAW EVALUATION MODEL SIMULATION FOR EVALUATING FLIP LEARNING IN SMK TI BALI GLOBAL JIMBARAN

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Abstract. The implementation of flip learning at SMK TI Bali Global Jimbaran is still experiencing several obstacles such as not accustomed to independent learning students, teachers who are not used to making digital material and there is no official regulation of its implementation. This study aims to determine the percentage level of effectiveness and the constraints faced in implementing flip learning in schools using the Alkin evaluation model combined with SAW (Simple Additive Weighting). Determination of the sample in this study using simple random sampling technique, consisting of the principal, teachers and students who actively carry out flip learning. The data in this study were collected using a questionnaire based on the components of the system assessment, program planning, program implementation, program improvement and program certification. This study obtained calculations from the evaluation aspect from the highest to the lowest values with the SAW calculation. The highest score was the legality aspect in system assessment with a value of 0.4265 and the lowest score was hardware maintenance aspects of the program improvement with a value of 0.3996. This lowest aspect is recommended to be a priority for improvement.

DEVELOPING STOCK AND SAUCE LEARNING MATERIALS OF EUROPEAN CULINARY COURSES FOR THE THIRD SEMESTER STUDENTS OF THE CULINARY ARTS VOCATIONAL EDUCATION PROGRAM

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Abstract. Learning activity is ineffective because teacher must provide detailed information without appropriate learning materials. Lack of learning materials limits students to study after the class has ended. The solution for this problem is to develop sufficient learning materials. The current research was aimed at describing the process of developing learning material and finding out the validity of the learning materials about stock and sauce on the European Culinary Course for the third semester students of Culinary Art Vocational Education. The research used ADDIE model (Analyze, design, development, implementation, and evaluation). The instrument used was validation sheet. This instrument was used to gather score taken from the learning material expert and learning media expert. The processes of developing materials were need analysis of the learning materials, writing draft of the learning materials, validation and revision. The learning materials produced consisted of four main components. They are introduction, learning, evaluation and conclusion.

STUDENT PERFORMANCE ASSESSMENT STRATEGIES BY INVOLVING PEERS STUDENTS

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Abstract. One of the important factors in achieving students learning outcomes is the implementation of assessment on the learning. It is vital to uncover or obtain information related to the students' achievement of the competencies comprehensively. Therefore, data is needed as an item of evidence and basis for decision making regarding the student's achievement of the competencies. To allow the students to demonstrate their competencies is one of the processes in collecting those items of evidence. Students demonstrating their competencies is a type of student performance. As a result, there is a need to engage with this performance assessment. The aim of the present study was to conduct the students' performance assessment by using Google Form and the involvement of peer students. Google form is an alternative computer-based assessment. The application is easy to use with the availability of useful features. It is also relevant to be used today as learning and teaching are mostly conducted online. Based on the performance assessment that involved peer students, score distribution in every performance task given was born in the normal curve. The result showed that the involvement of the peer students in the performance assessment yields positive outcomes. It can be said that the involvement of the peer students in assessment guaranteed the objective assessment based on the given rubrics.

DEVELOPING THE RESULTS OF LEARNING *MEGIBUNG* FOR VOCATIONAL EDUCATION AND CULINARY ARTS STUDENTS OF GANESHA EDUCATION UNIVERSITY

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Abstract. This study aims to develop teaching materials for the Megibung tradition and determine the feasibility of teaching materials that have been developed according to expert judgment and students at the Vocational Education and Culinary Arts Study Program, Faculty of Engineering and Vocational Studies, Undiksha. This research method uses Research and Development (R & D) which begins with a preliminary study followed by a product development and assessment stage. The research subjects were determined using a purposive sampling technique consisting of two expert judgments and 34 students of the Vocational Education and Culinary Arts Study Program (PVSK). Collecting data using documentation study techniques, and questionnaires. The procedure of this research is the process of preparing the Megibung tradition teaching materials through the following stages: (a) Preliminary study, by conducting interviews with the head of the study program. Study syllabus analysis and analyze basic competencies in the preparation of teaching materials (b) Collecting learning resources and literature and subject matter to be compiled. (c) Drafting the teaching material for the Megibung tradition. (d) Limited trial of the product. (e) Broader product trials. (f) Data processing and evaluation. The conclusion of this study is the development of teaching materials for the Megibung tradition, namely materials developed from the 2019 curriculum

and the syllabus of the Balinese culinary course. Teaching materials were developed starting from Balinese culinary material in general, the history of the Megibung tradition, preparation of tools, ingredients, spices and processing methods for Megibung dishes, procedures for serving Megibung and eating procedures with Megibung.

EDUCATIONAL BIG DATA INFRASTRUCTURE: OPPORTUNITIES, DESIGN AND CHALLENGES

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Abstract. The importance of data to help management of education institutions in the decision making is recognized by all parties in order to improve the quality and competitiveness of their graduates in the society. However, to process data in an increasing amount, so called Big Data, in an efficient way in the present era, facilities and resource capabilities are needed to convert the data into information that can be easily visualized and consumed by various interested parties. Big Data infrastructure development is important because the use of tools and applications with old technology will not be sufficient to help businesses achieve the needs in a fast manner. Big data presents various challenges in infrastructure provision and resource constraints as well as privacy and security concerns. This paper provides an initial development of how to build Big Data infrastructure in an education institution that is adaptable to existing conditions which provide considerable performance and capabilities in order to perform information mining to assist in decision making. The scenarios in this case provide valuable additional insights for organizations to apply it to their environment and can be leveraged to reach critical decision making through data visualization.

A PROTOTYPE OF IOT-BASED SMART SYSTEM TO SUPPORT MOTORCYCLISTS SAFETY

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Abstract. The article explains the smart system prototype for support safety riding using the Internet of Things (IoT) technology that consists of connectivity objects like helmets, motorcycles, and riders/people (via smartphone). The system is pervasive in helmets and motorcycles with several main electronic components, including NodeMCU microcontroller, accelerometer-gyroscope sensor, a GPS (Global Positioning System) module, flex sensor, buzzer, and relay. Then helmet, motorcycles, and riders to connect with others through the internet with the android application interface. The application can monitor real-time status and location riders using firebase real-time database. This system has four features: a combination of previous related works, namely helmet detection, drowsiness detection, accident detection, and notification with the accident's location that can be tracked by others. The results of this system prototype experiment show that all features of the system are running well. The accuracy value for helmet detection is 100%, drowsiness detection is 87%, and accident detection is 90%. Rider status and location can be monitored and tracked by others via the android application.

STUDY OF THE IMPLEMENTATION OF ONLINE LEARNING MODELS IN VOCATIONAL SCHOOLS

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Abstract. The development of education and technology can have a big influence on the quality of students and teachers in the development of the world. Models and media can increase effectiveness and creativity in the learning process. Especially, when discussing the learning process at Vocational High School (VHS) which requires a balance between practice and theory, interaction and guidance needed by students. Increasing the value of student learning results and quality by utilizing online learning models in vocational high schools can be used as a reference for the successful implementation. The purpose of this study is to determine the application of online learning that is practiced from several perspectives, both in terms of students, teachers, or the media used. This research is a literature review study by gathering information relevant to the topic and object of research. The analytical technique used by describing the findings from various sources to answer the topic under study. The results showed the implementation of online learning models from the point of view of effectiveness, quality, ease of media, implementation and development,

effects of online learning showed that online learning had a positive effect on the development of student learning.

THE DEVELOPMENT OF INTERACTIVE LEARNING MEDIA AUTOPLAY MEDIA STUDIO EIGHT IN DIGITAL SIMULATION LESSONS AT SMK GANESHA NUSANTARA SINGARAJA

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Abstract. This study aims to: 1) create interactive learning media of autoplay media studio eight on digital simulation subjects at SMK Ganesha Nusantara Singaraja, 2) to determine the feasibility level of Interactive learning media Autoplay Media Studio eight on digital simulation subjects at SMK Ganesha Nusantara Singaraja, 3) to determine student responses to Interactive Learning media of Autoplay Media Studio eight in digital simulation subjects at SMK Ganesha Nusantara Singaraja. The research method used by researchers are research and development. Based on the results of the research that have been implemented, the results obtained are interactive learning media autoplay media studio eight on digital simulation subjects at SMK Ganesha Nusantara Singaraja in the form of files. Based on the results obtained, the Interactive Learning Media Autoplay Media Studio eight in digital simulation lessons at SMK Ganesha Nusantara Singaraja very worth used as a learning media and right on target especially during Covid-19 pandemic.

DESIGN OF USER SATISFACTION EVALUATION INSTRUMENT OF INFORMATICS ENGINEERING EDUCATION GRADUATES, FACULTY OF ENGINEERING AND VOCATIONAL, UNIVERSITAS PENDIDIKAN GANESHA

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Abstract. This research was a design stage of an instrument used to evaluate the satisfaction of the users of the graduates of Informatics Engineering Education Study Program. This research was aimed at producing an instrument in the form of a proper questionnaire. The questionnaire creation was based on seven indicators as a reference namely, ethics, expertise in accordance with the field, foreign language skills, the ability to use information technology (IT), communication skills, teamwork, self-development. The seven indicators were broken down into 20 statement items to a questionnaire draft. There were several tests carried out on the questionnaire draft, the Gregory test involving 2 experts in the field of evaluation, the validity of the items using Pearson Product Moment correlation and the reliability test using the Cronbach alpha formula. The result of the Gregory test is the coefficient value of the content validity of the instrument being tested (0.85) which is categorized as high. Based on the item validity test, there are 17 questions that are valid. The reliability test results in a Cronbach Alpha value of 0.973. Based on the results of the tests carried out, the questionnaire instrument fits for measuring user satisfaction of the Informatics Engineering Education study program graduates.

INDONESIAN SENTIMENT SUMMARIZATION FOR LECTURER LEARNING EVALUATION BY USING TEXTRANK ALGORITHM

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Abstract. This research was a design stage of an instrument used to evaluate the satisfaction of the users of the graduates of Informatics Engineering Education Study Program. This research was aimed at producing an instrument in the form of a proper questionnaire. The questionnaire creation was based on seven indicators as a reference namely, ethics, expertise in accordance with the field, foreign language skills, the ability to use information technology (IT), communication skills, teamwork, self-development. The seven indicators were broken down into 20 statement items to a questionnaire draft. There were several tests carried out on the questionnaire draft, the Gregory test involving 2 experts in the field of evaluation, the validity of the items using Pearson Product Moment correlation and the reliability test using the Cronbach alpha formula. The result of the Gregory test is the coefficient value of the content validity of the instrument being tested (0.85) which is categorized as high. Based on the item validity test, there are 17 questions that are valid. The reliability test results in a Cronbach Alpha value of 0.973. Based on the results of the tests carried out, the questionnaire instrument fits for measuring user satisfaction of the Informatics Engineering Education study program graduates.

EMPLOYABILITY SKILLS OF VOCATIONAL EDUCATION GRADUATES STUDENTS NEEDED BY 4TH INDUSTRIAL REVOLUTION WORKPLACE

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Abstract. The qualified vocational education graduates who have an employability skill are needed to face 4th industrial revolution workplace. The aims of this research are determining the development of the 4th industrial revolution in the world of work and identifying the employability skills of vocational education graduates needed by 4th industrial revolution workplace. This article reviews various relevant literature to identifying employability skills of vocational education graduates' students needed by. The results of the review are employability skills for vocational education graduates is not an option, but is a skill that individuals should have to continue their career in life. They will have employability skills that are needed by the workplace if supported by the role of schools.

IDENTIFYING STUDENTS' LEARNING DIFFICULTIES IN HUMAN AND COMPUTER INTERACTION COURSE THROUGH THE IMPLEMENTATION OF PROJECT BASED LEARNING MODEL

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Abstract. This study aimed at identifying students' learning difficulties in Human and Computer Interaction course through the implementation of Project Based Learning model (PjBL model). PjBL Model has 6 stages, starting from giving essential questions, continuing with designing a project, writing the project implementation schedule, monitoring, carrying out the project product evaluation, and ending with carrying out the learning experience evaluation. The study used observation sheet, rubric and interview guide for collecting the data and descriptive qualitative analysis for analyzing the data. The collected data were reduced and presented and then analyzed to get some conclusions. The result of the study showed that it was still found out or identified that the students had difficulties in learning in Human and Computer Interaction course through the implementation of the PjBL model. However, the amount of the difficulties was not significant. The learning difficulties experienced by the students were caused more by an internal factor, namely the low motivation of the students as the result of

their low interest in courses that contain programming and they tended to prefer a multimedia course. However, it was admitted by the students that Human and Computer Interaction course taught by the PjBL model had given them unique experiences. The students felt that there was an increase in knowledge from the problem-solving activities that they did, since they had a great opportunity to explore their abilities by themselves so that they had new knowledge and experience which made their learning activities better.

DESIGNING THE BALINESE SCRIPT-TO-SPEECH SYNTHESIS SYSTEM USING NOTO SERIF BALINESE FONT

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Abstract. The existence of regional languages shows an identity of the existence of a tribe. Indonesia has many regional languages, one of which is Balinese with Balinese script as input for the script which comes from Sanskrit. Reading Balinese script requires knowledge of Balinese script and Balinese culture so that it can correctly pronounce the written Balinese script. With a long learning process, it certainly causes a slowdown in knowledge about how to read the Balinese script. Therefore, it is necessary to have a system that can translate Balinese script into a speech so that it can be used in learning the Balinese script without any mistakes in pronouncing vowels. This research will design a system synthesis of Balinese script into a speech with the system synthesis method of Noto Serif Balinese Font which consists of three processes namely text pre-processing, prosody generation, and concatenation. Concatenation or combining speech will use the Pitch Synchronous Overlap Add Method (PSOLA). The result to be achieved in this research is to be able to decompose the Unicode from the Noto Serif Balinese font into a sentence which then this sentence will become a message. In the future, this research can use input from an image

to directly enter into speech. Making it easier for users to translate the Balinese script.

A MODEL FOR POST TRANSLITERATION SUGGESTION FOR BALINESE PALM LEAF MANUSCRIPT WITH TEXT GENERATION AND LSTM MODEL

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Abstract. The main challenge found in building an automatic transliteration system for Balinese palm leaf manuscript (Lontar) collections is that the recognition error in a small portion of glyphs of Balinese script can affect the results of transliteration widely. This is due to the fundamental nature of Balinese script which is a complex alphasyllabic script. This paper presents an initial proposition for a general scheme and model for suggesting several possible transliterations with text generation and LSTM for Lontar collection. The Edit-Insert-Replace model was proposed to be applied on the existing word collection dataset and a Bidirectional LSTM model with specific feature extraction method was built for the training process of post transliteration suggestion module. This module will help in suggesting several possible transliterations based on the initial transliteration from the previous system.

AN EXPERIMENT OF PACKING AYAM BETUTU AS BALINESE SPECIAL SOUVENIR USING VACUUM METHOD

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Abstract. This research aims at knowing the shelf-life quality of Ayam Betutu which is packed using vacuum method, seen by the aroma, taste, and texture aspects of the dish. The panellists in this research 15 culinary experts. The observation method using quality control sheets as the instrument was used to earn the data. The research used descriptive qualitative design to analyse the data. The result showed that the shelf-life quality of Ayam Betutu packed using vacuum method is longer rather than the one which did not. The shelf life of Ayam Betutu packed using vacuum method was about three days long. It can be concluded that the vacuum method can make the shelf life of Ayam Betutu longer.

DEVELOPMENT OF BIT FRUIT EXTRACT (BEETROOT) AS A NATURAL COLOR FOR TEMPE NOODLE PRODUCTS

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Abstract. This study aims to obtain tempe noodles by optimizing the natural coloring ingredients of beetroot extracts to support the empowerment of natural dyes as functional ingredients by: (1) Beetroot extract formulation in processing tempe noodle products, (2) Knowing the nutritional value of tempe noodle products using beetroot extract natural dyes, (3) Determine the quality (taste, color, and texture) of tempe noodle products using beetroot extract natural dyes. This type of research is experimental research. The design of this study provides 150 ml, 100 ml and 50 ml beet extract formulations. While the data collection techniques were carried out through organoleptic quality tests with parameters namely color, taste, and texture. There were 30 panelists involved. The data collected was analyzed descriptively. The results showed that: (1) tempe noodles with a 150 ml formulation of beet extract were quite preferred in terms of color and texture. (2) tempe noodles with formulation of 100 ml beetroot extract are very preferred in terms of color, texture and taste. (3) tempe noodles with formulation of 50 ml of beetroot extract are quite preferred in terms of texture and taste, while in terms of color are less preferred. nutrient content (protein) with a 100 ml formulation of 27.355 gr, higher than the 150 ml (23.418 gr) and 50 ml (24.4108 gr) formulations. Thus, optimizing the processing of noodle products using beet extract is a 100 ml formulation because it produces the best quality taste, color, texture and protein concentration.

MONITORING OF THE FEASIBILITY OF RICE FIELD USING IOT TECHNOLOGY BASED ON THE FORWARD CHAINING METHOD

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Abstract. This study aimed to implement a system based on the forward chaining algorithm that can provide realtime information on irrigation and soil feasibility. There are three aspects studied, namely, water level, soil moisture, and temperature. The system developed uses an ultrasonic sensor as a water level detector, a soil moisture sensor as a soil moisture detector, and a DS18B20 sensor for measuring temperature. This system uses the ISP8266 module NodeMCU microcontroller as a Wifi module and uses a solar cell to utilize the sun as an environmentally friendly power supply. Two tests were carried out including laboratory testing and field testing. Laboratory testing shows that the system works with an accuracy of 57%. Tests are carried out on the three aspects studied. Meanwhile, field testing shows that some of the rice fields in Cekik Hamlet are not yet suitable for processing based on the percentage of land feasibility. There are 8 (eight) paddy fields with an average area of 25 square meters, and they are named rice field B, C, D, E, F, G, H, and I. The test results show that the lands that suitable for work are rice field B and rice field E. The feasibility value is measured based on the level of water availability above 3 cm, wet soil moisture with a value of 300 or below 300, and a temperature below 25 degrees Celsius. Validation was obtained from farmers, head of rice field irrigation (Prajuru Subak), and agricultural extension workers. It can be

concluded that the system developed has been able to provide information on irrigation or water availability and the feasibility of cultivating the land in real-time.

EVALUATION OF CONTRAST ENHANCEMENT METHODS ON FINGER VEIN NIR IMAGES

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Abstract. Biometrics is a technology used to identify a person based on physical characteristics and behavioural characteristics. Biometrics is used to increase the importance of personal data. However, many biometric models can be manipulated, such as fingerprints. To cover the fragility, a biometric pattern based on a blood vein, such as finger vein pattern, was developed. To obtain a clear image of the finger vein, one of the acquisitions tools used is called Near-Infrared (NIR). Despite using NIR technology in the acquisition process, it is not uncommon for the finger vein pattern to be unclear. To overcome this problem, it is necessary to increase the contrast quality of the image. This study proposes the use of the BPDFHE method to improve the contrast quality of finger vein NIR images. As a comparison material for performance tests, the HE, AHE, and CLAHE methods were also tested. The test is carried out according to AMBE, PSNR, SSIM, FSIM, and computation time parameters. Based on the test, the results showed that the BPDFHE obtains AMBE, PSNR, SSIM, and FSIM up to 0.054, 26.873, 0.840, and 0.906, respectively. It also gains the less computation time up to 10.988 seconds. These results indicate that BPDFHE is an effective and efficient method in improving the contrast quality of finger vein NIR images.

DEVELOPMENT OF HOUSEKEEPING LEARNING MODULE BASED ON E-LEARNING

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Abstract. Learning module are needed because the use of learning module can make learning activities more well planned. This study aims are (1) to describe the development of Housekeeping learning module based on e-learning, (2) to determine the feasibility of Housekeeping learning module according to the responses of content experts, (3) to determine the feasibility of Housekeeping learning module according to the responses of media experts, (4) to determine the feasibility of Housekeeping learning module according to the responses of students as a target test. This research is a development research using the ADDIE model. The research variable is the Housekeeping learning module and the data collection technique uses a questionnaire. The analysis used is descriptive quantitative analysis. The results of this study are: (1) Housekeeping learning module based on e-learning using the ADDIE development model, (2) the content expert's test show that the learning module are in very good qualifications with a percentage of 98.34%, (3) the media expert's test showed that the learning module were in good qualifications with a percentage of 88% (4) the target test showed that the learning module were in very good qualifications with a percentage of 90.44%.

DESIGN OF AN INTEROPERABLE SOCIAL ASSISTANCE HEALTH INSURANCE VALIDATION SYSTEM

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Abstract. Many social assistance programs must be managed by local governments, including health insurance contribution assistance (PBI). The government must be able to distribute social assistance recipients equally and accurately. The government must ensure that only one family member is registered in one of the social assistance schemes, such as PKH (Program Keluarga Harapan), PBI (Program Bantuan Iuran), or BLT (Bantuan Langsung Tunai). Therefore, interoperability of data between systems is important to check and validate the membership of potential participants in one assistance scheme. Valid data is the key in data exchange, especially PBI data that has not been processed optimally. However, there are still inconsistent and incomplete data the annual PBI participants. The first thing that can be done is to validate PBI data. Through the PBI data validation system, validation can be carried out more thoroughly by utilizing the supported data from the API of the civil registration and the Bridging BPJS. With the validation system, PBI data management becomes more accurate and has fast access to facilitate reporting compared to the previous system that still used Excel. The PBI validation system also supplies valid PBI data to related systems that have registered with the API services. By using JWT in RESTfull API, system interoperability could be done securely.

ANALYSIS OF ONLINE LEARNING MEDIA SELECTION FOR STUDENT LEARNING INDEPENDENCE DURING THE COVID-19 PANDEMIC

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Abstract. The covid-19 pandemic affects learning activities. Learning activities that are usually carried out directly or face-to-face, have turned into online learning activities used learning media that must be considered so students have high learning independence. The purpose of this study is to analyze the selection of learning media for student learning independence during the Covid-19 pandemic. The research method in this research used literature research method. In literature research, there are four steps that need to be considered, namely, designing the review, conducting the review, analysis and writing review. The research subject is a journal that has a relationship with the research title. Based on the results of the literature review that has been carried out, it can be seen that the selection of learning media needs to be done so that it can adjust to the objectives to be achieved so that learning can be carried out effectively. Thus, student learning independence can increase.

IMPLEMENTATION OF THE CIPP MODEL IN THE STUDY OF THE EFFECTIVENESS EVALUATION OF THE RESEARCH BOARD IMPLEMENTATION IN THE HIGH SCHOOL

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Abstract. The purpose of this study was to determine the effectiveness of implementing research councils in secondary schools. To determine the effectiveness of the implementation of the research council in preparing students to participate in scientific writing competitions, and the ability of students to innovate in research, it is necessary to evaluate. The method used to evaluate the implementation of research boards in schools is the CIPP evaluation model. With this CIPP model, the implementation of school research boards is evaluated in terms of context, input, process and product. This research was conducted at the Bali Mandara State Senior High School. The result of this research, when viewed from a contextual perspective, is the legality of the existence of the research board in schools as indicated by the school's decision letter regarding the research board. When viewed from the point of view of student input, there are 140 students involved and teachers involved in research council activities, supported by assignments. When viewed from a process perspective, the research council's activities are carried out through extra-curricular activities. When viewed in terms of products, the research council's activities produce scientific work of students who are ready to take part in scientific writing competitions. There were 4 students whose research results succeeded in becoming Indonesian students' research competency finalists and 6 students who passed the scientific scientific writing competition.

THE EFFECTIVENESS OF AUTOMATIC NETWORK ADMINISTRATION (ANA) IN NETWORK AUTOMATION SIMULATION AT GANESHA UNIVERSITY OF EDUCATION

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Abstract. Network administration activities pose scalability challenges. Challenges arise when the devices handled are very numerous. Instead of using traditional methods, IT organizations need to implement automation methods. It is very inefficient to administer a large number of network devices by logging into them one by one. Human error (human error) is very susceptible to occur, which will cause configuration inconsistencies, to configuration errors, which will have an impact on poor network services provided. The automation method on the network is known as Network Automation (NA). NA uses an algorithmic approach in arranging steps in problem solving. NA is executed in the form of an application program that has the main function of automating routine, complex, repetitive, and comprehensive activities. Network administration activities that can be automated include routing automation, virtual administration and backup / restore. The simulation of NA implemented by ANA. ANA is the testbed that carried out using the Python programming language by utilizing Paramiko and Netmiko Library in a virtual environment using GNS3 and VirtualBox. The purpose of developing ANA is so that network administration activities can run more efficiently. The results of applying the ANA can be taken into consideration in network administration activities. In this paper shows ANA is effective to prove the NA purpose.

INCREASING STUDENT ACHIEVEMENT MOTIVATION DURING ONLINE LEARNING ACTIVITIES

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Abstract. Motivation learning to engage students has been a challenge in building and learning. This study studied the effectiveness of learning using online media in improving student academic achievement and saw an increase in student motivation in online learning. This type of research includes literature research as an information activity that is relevant to the topic used as the research object. The purpose of this study is to explain online learning in improving students' academic achievement and facilitate them for all kinds of learning interactions. This research may be useful in supporting the idea that evaluation of online learning is important for students who have good learning motivation. In line with the findings obtained, this study provides operational advice on how to increase student interest and motivation in online learning activities. A systematic review of the study of students' motivational interest in online learning activities in the

type of learning environment and how to increase student motivation in terms of the importance of students in increasing learning activities. Study analytics to understand learners at a very subtle level to provide the most appropriate support for students.

ARCHITECTURES, FRAMEWORKS, AND APPLICATIONS IN IOT-BASED SMART ENVIRONMENT : A REVIEW

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Abstract. We are in a time when a large number of electronic devices influence human interaction with the environment. The physical place where these various devices interact with each other to provide useful services for end-users gives birth to the concept of a Smart Environment. The interaction of the multiple devices that make up a smart environment produces a large amount of information or Big Data problems, so the insertion of the Internet of Things (IoT) technology in the environment is essential. IoT integration and cloud computing technology are needed as the impact of evolution on the next generation of smart environments. Trends in research related to IoT and Smart Environments are increasing rapidly beyond the trend of Smart City that first emerged. This paper reviews current trends about smart environments, architectural concepts, frameworks, and applications of IoT-based Smart Environments.

WEB-BASED BULELENG REGENCY AGRICULTURE PRODUCT INFORMATION SYSTEM DEVELOPMENT

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Abstract. Agriculture is very important for the welfare of the nation. However, accurate and up-to date agriculture data in Buleleng regency are difficult to find. This study aimed to make a developmental design of Web–based Buleleng regency agriculture product information system and implement it to support region's best products-based regional people economy. The development of this system used Software Development Life Cycle (SDLC) method with Waterfall model that followed five stages of activities, namely (a) requirements definition, (b) system and software design, (c) implementation and unit testing, (d) integration and testing, and (e) operation and maintenance. The data need in the system was obtained by working together with Buleleng regency agricultural office. Later this system will involve some users with different accessing rights, namely field agriculture extension agents who manage product data, the workers of the agriculture office as administrators of the system, the general public, and consumers who probably come from hotels, restaurants, supermarkets, etc that become the markets of the agriculture products in Buleleng regency. The consumers can order the products. However, this system does not handle online payments. It is expected that with this system Buleleng regency will have accurate and up to date data related to agriculture products that are available in Buleleng. In addition, this system can be used as a model for other regencies in Bali and in other regions in Indonesia. With the

availability of this system in the future the farmers as producers will get good prices for their products and the consumers will get products with good quality at reasonable prices.

IOT-BASED PORTABLE MODULES FOR ENERGY CONSUMPTION MONITORING IN SMART HOME SYSTEM

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Abstract. Energy consumption has become one of major problems in Indonesia. The use of recent technology is highly beneficial since various automation could be done even in simple devices. In this research, portable smart home modules based on the internet of things (IoT) technology to monitor the power consumption in household electrical devices was built. The module consisted of current sensors, voltage sensors, and IoT Wifi Development Board. It communicated with the server, built using the Raspberry Pi, using the MQTT protocol. The server equipped with web pages that allowed users to monitor the usage of electrical power by the devices. Therefore, all of the connected modules could be monitored to provide information reagrding the devective of an electric household device. The results had shown that the prototypes of the modules had been successfully built. Using the 60 seconds interval measurements it was shown that very slightly differences was found between the system measurements compared to the manual one. The power consumed by the module was very low where current sensor uses 0.125 Watt while the voltage sensor uses 0.001 Watt. The portable devices were developed in the shape of small boxes; therefore, it could be easy to move and installed.

DEVELOPMENT OF SEARCH ENGINE SERVICE FOR ACADEMIC OFFICIAL DOCUMENTS

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Abstract. Document search engines are a necessity in educational institutions, where search engines are expected to be able to find the right document quickly. Academic official documents are generally private, so that public search engines such as Google cannot index and search these documents. Therefore, we need a specific search engine developed for the needs of educational institutions, in this case, Universitas Pendidikan Ganesha. In this article, we will discuss how to develop an academic official document search engine, starting from data retrieval and extraction, query parser development, and search engine evaluation. The query parser developed utilizes the field annotation mapping mechanism and n-gram keyword mapping. The evaluation results show a significant increase in performance when compared to only using Solr's Standard Query Parser.

PROCESSING MOCAF INTO PIE SUSU WITH THE ADDITION OF SUPER FOOD 'SPIRULINA'

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Abstract .The purpose of this study was to obtain pie susu mocaf-spirulina products with local fruit varieties (pineapple and bali grapes). Mocaf (modified cassava flour) has characteristics similar to low protein flour and gluten free. Spirulina is a type of blue-green algae that is considered a super food because of its nutritional properties that are very good for health. The research method includes 1) experimental trials of the formula for mocaf spirulina pie susu, in the variation of the addition of spirulina to the formulation of mocaf pie susu 2) conduct an Organoleptic Test, with an instrument using the Visual Analog Score (VAS) for the Hedonic test (preference) 3) Perform an Organoleptic Test, with an instrument using VAS for the Hedonic Quality test (quality). The results showed: 1) obtained a pastry formulation (skin) of mocaf pie susu with the addition of 2.5 gr of spirulina (0.5% of the weight of the ingredients)ained mocaf pie susu formulation with the addition of 2.5gr spirulina to mocaf pie susu with pineapple and grape vola; 2) The level of preference for mocaf spirulina pie susu (pineapple vla and grape vla) is the color of the likes category, the texture of the likes, the aroma of the likes and the taste of the likes. 3) the quality level of mocaf spirulina pie susu (pineapple vla and grape vla) is greenish color, crunchy texture, pastry fragrant aroma and sweet taste.

BUSINESS PROCESS IMPROVEMENT DESIGN OF COMPLAINTS ON TECHNICAL INFORMATION SYSTEM PROBLEMS USING THE BUSINESS PROCESS IMPROVEMENT METHOD AT UPT. TIK UNDIKSHA

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Abstract. UPT. TIK Undiksha is one of the organizational units that have supported business processes for Undiksha's main business processes to produce quality graduates. Various attempts were made to optimize the quality of ICT services. This study aims to provide recommendations for the improvement of one of the business processes at UPT. TIK Undiksha. The researcher proposes a business process design for complaints about technical information systems problems (To-Be) based on the results of the As-Is business process modeling and evaluation of the problems. The analysis, evaluation, and recommendations for business process improvement in this study use the Business Process Improvement (BPI) method. The streamlining tools proposed to optimize as-is business processes are standardization and upgrading. The simulation results show that there is a decrease in the use of resources and a decrease in time for the design business process compared to the current business process.

COMPARISON OF THE BM25 AND RABIN KARP ALGORITHM FOR PLAGIARISM DETECTION

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Abstract. Plagiarism occurs because of the easy distribution of data. Plagiarism detection of documents such as student assignments and final projects requires a long process, often overlooked. However, to avoid plagiarism, a document must be checked for the level of plagiarism. Plagiarism detection can be done online / offline with the plagiarism checker. However, checking documents with plagiarism checkers such as Turnitin, Dupli Checker, Copyleaks, PaperRater, Grammarly and others requires additional fees. Several studies have been conducted to detect plagiarism. BM25 and Rabin Karp are examples of the Plagiarism Checker method. BM25 is tf idf based, while Rabin Karp is Hashing based. Each method needs to know its performance to detect plagiarism. Based on these problems, a study on the comparison of plagiarism detection with the BM25 algorithm with Rabin-Karp will be conducted. The case study is to use the article in Indonesian. The application of the BM25 and Rabin Karp algorithms goes through the Pre-Processing stage which consists of case folding, cleaning, tokenizing, filtering, and stemming. In this study, we used sastrawi stemmer. The test was conducted on twenty articles in Indonesian. The test results that are seen are the performance in the form of execution time.

CONSUMPTION AND PRODUCTION OF SHORT FILM: TOWARD THE CONCEPTUALIZATION OF MULTIMODAL LANGUAGE LEARNING FOR DEVELOPING 6CS SKILLS IN DIGITAL AGE

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Abstract. The 21st century's democratization and demonetisation of multimodal learning sources allows anyone to be both consumers and producers at the same time. The present study argues that the consumption and production of independent short films through affordable digital devices as beneficial for multimodal language learning, befitting the student's interest and the building of the 6 essential skills of their 21st century context. The present study was designed as a library research observing 30 most recommended articles in the related topic by Google Scholar, published in reputable international journal from 2010 to 2020. It is argued that consumption and productions of short films can be used for enhancing the students' language skills while they can be used to tap the students' creativity, communicative skills, critical thinking, and collaborative skills, while they can also be used to enhance their compassion toward issues around their society and environment during the implementation of procedural and computational thinking in this consumption and productions of short films. These also place the students as the subjects of the learning process, where their views, opinions, and feelings about certain issues matter so they can play their role in making the world a better place to live in.

PERFORMANCE ANALYSIS OF SUPPORT VECTOR MACHINES WITH POLYNOMIAL KERNEL FOR SENTIMENT POLARITY IDENTIFICATION: A CASE STUDY IN LECTURER PERFORMANCE QUESTIONNAIRE

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Abstract. The lecturer performance evaluation process can be carried out using an open questionnaire that is filled out by students at the end of the semester. In this questionnaire, students can provide an assessment in the form of comments, suggestions, and criticism of the lecturer's performance which in turn can describe the level of student satisfaction with the lecture process. Conducting assessments or analyzes one by one on the open questionnaire entries manually will certainly have an impact on high costs, such as time and energy. Sentiment polarity identification is a process in sentiment analysis that classifies text into a sentence or document and then determines whether the opinion expressed is positive, negative or neutral. In this research, a sentiment polarity detection system will be developed in a lecturer evaluation questionnaire using the Support Vector Machine (SVM) method with a polynomial kernel. The test results show that the performance of the SVM method with the Polynomial kernel is strongly influenced by the value of the learning rate parameter, the maximum iteration, and the degree, with the optimal parameter values, respectively, 0.001, 200, and 0.3. The use of optimal parameter values in the process of identifying sentiment polarity obtained an accuracy value of 84.88%.