BUKTI KORESPONDEN PROSIDING

Judul :
Prediction of Banking Stock Prices Using Naïve Bayes Method.

1. **Review artikel (7 November 2020)**
2. **Rundown and parallel session (1 November 2020)**
3. **Program Book**
4. **Sertifikat Presentasi (4 November 2020)**
5. **Paper publish (6 April 2021)**
6. **Prosiding**

1. Review artikel (7 November 2020)

Gmail

Meilany Nonsi Tentua <meilany@upy.ac.id>

093_REVIEW

1 message

UPINCASE Conference <upincase@upy.ac.id> Sat, Nov 7, 2020 at 12:11 PM
To: meilany@upy.ac.id

Dear Presenters,

Here we send the results of the review from the reviewer and the results of the Turnitin for similarity check. The standard for similarity check Turnitin is 20% (maximum). Please check it out.

Please revise the paper based on the review result, and please send it back to the committee via email upincase@upy.ac.id not later than November 12, 2020, with the format Subject: Paper ID_first author.

Example:
To: upincase@upy.ac.id
Subject: 172_Marti Widya Sari
then, please attach the revised paper file in DOC / DOCX format (not PDF)

If by this date (12 November) you have not sent a revision, what we will submit to IOP is the full paper file that was submitted previously.

For further information or questions, please contact the committee or through the respective moderators of each room.

Thank you.

--
Sincerely,

UPINCASE 2020 Committee
Email: upincase@upy.ac.id

4 attachments

UPINCASE_IOP Paper Template.docx
535K

093_Ida Setiani_Prediction of Banking Stock Prices Using Naïve Bayes Method.docx
14K

093_Ida Setiani _Prediction of Banking Stock Prices .pdf
1307K

093_REVIEW.pdf
110K

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PAPER REVIEW RESULTS

PAPER ID : 93

PAPER TITLE : Prediction of Banking Stock Prices Using Naïve Bayes Method

No	Review	Results
1	TOPIC. Is the topic relevant to the conference area of interest?	Very Good
2	ABSTRACT. Are all required components included in the abstract?	Good
3	GOAL. Is the goal explicitly stated in the Introduction? Is its formulation clear and unambiguous?	Good
4	STRUCTURE. Is the paper´s structure coherent? Is it in coherence with the goal of the paper?	Good
5	TOOLS AND METHODS. Are methods the author uses adequate and well used?	Good
6	DISCUSSION/CONCLUSION. Is it related to the results presented before? Do you consider them as coherent?	Good
7	LITERATURE. Does the author utilize relevant literature?	Good
8	AUTHOR´s KNOWLEDGE. What is the level of author´s knowledge? Does he/she utilize all recent contributions relevant to the topic?	Good
9	LENGTH OF PAPER. Is the length of the paper adequate to the significance of the topic? Do you suggest shortening the paper without losing its value?	Good
10	WRITING STYLE. Is the writing style clear and understandable?	Good
11	Further comments on the paper	Give your overview based on figure
12	Recommendation	Accepted with Minor Revision

2. Rundown and parallel session (1 November 2020)

Gmail

Meilany Nonsi Tentua <meilany@upy.ac.id>

[UPINCASE 2020] RUNDOWN AND PARALLEL SESSION

2 messages

UPINCASE Conference <upincase@upy.ac.id> Sun, Nov 1, 2020 at 9:30 AM
To: marti@upy.ac.id
Bcc: meilany@upy.ac.id

Dear Presenters,

Here we attach the Conference Rundown and Parallel Session Schedule of UPINCASE 2020. Please check it out.

Thank you.

--
Sincerely,

UPINCASE 2020 Committee
Email: upincase@upy.ac.id

3 attachments

- **2020_UPINCASE RUNDOWN.pdf** 561K
- **DAY1_UPINCASE PARALLEL SESSION.pdf** 549K
- **DAY2_UPINCASE PARALLEL SESSION.pdf** 549K

Meilany Nonsi Tentua <meilany@upy.ac.id> Wed, Nov 4, 2020 at 6:50 AM
To: Ida Setiani <idasetiani13@gmail.com>

[Quoted text hidden]

3 attachments

- **2020_UPINCASE RUNDOWN.pdf** 561K
- **DAY1_UPINCASE PARALLEL SESSION.pdf** 549K
- **DAY2_UPINCASE PARALLEL SESSION.pdf** 549K

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CONFERENCE RUNDOWN
(Tuesday – Wednesday, 3 – 4 November 2020)

Time and Duration (WIB)	Activities	PIC
DAY 1 (Tuesday, 3 November 2020)		
07.00 – 08.00	Preparation and Attendance Registration	Committee
08.00 – 08.30	Opening session	Master of Ceremony
08.30 – 08.45	Greeting from Chair of Committee	Chair of Committee
08.45 – 09.00	Greeting from Rector of Universitas PGRI Yogyakarta	Rector
09.00 – 10.00	Speech from Keynote Speaker 1: *Science and Technology for Future Education*	Prof. Tai-Chien Kao (National Dong Hwa University, Taiwan)
10.00 – 11.00	Speech from Keynote Speaker 2: *Social Transformation in Society 5.0*	Prof. Wasino (Universitas Negeri Semarang, Indonesia)
11.00 – 12.00	Speech from Keynote Speaker 3: *Information and Technology for Sustainable Development*	Dr. David Nwanna Dumbiri (University of Benin, Nigeria)
12.00 – 13.00	Preparation for Parallel Session	Committee
13.00 – 16.00	Parallel Session (Author presentation Session Day-1)	Committee
DAY 2 (Wednesday, 4 November 2020)		
08.00 – 08.30	Preparation and Attendance Registration	Committee
08.30 – 09.00	Opening session	Master of Ceremony
09.00 – 10.00	Speech from Keynote Speaker 4: *Business and Services Transformation in Society 5.0*	Prof. Suzuki Takashi (Kyoto University, Japan)
10.00 – 11.00	Speech from Keynote Speaker 5: *Innovation of Educational Technology*	Dr. Arman Shah bin Abdullah (Universiti Pendidikan Sultan Idris, Malaysia)
11.00 – 12.00	Speech from Keynote Speaker 6: *Technology Development to Increase Crop Production*	Dr. Paiman (Universitas PGRI Yogyakarta, Indonesia)
12.00 – 13.00	Preparation for Parallel Session	Committee
13.00 – 16.00	Parallel Session (Author presentation Session Day-2)	Committee

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PARALLEL SESSION
DAY 2 (WEDNESDAY, 4 NOVEMBER 2020)

ROOM 1

Moderator: Kintoko, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	006	Titik Mulat Widyastuti, Wibowo	Android-Based Application Development as a Communication Media for Parents and Teachers In Addressing Early Childhood Bullying Behavior at SD Taman Sari 3 Yogyakarta
2	13.30 – 13.45	147	Harkati, Sukirman, Gunawan Setiadi	Improving on Teacher Performance, Work Motivation and Compensation at the Public Elementary Schools
3	13.45 – 14.00	089	Deni Setiawan, Marti Widya Sari, R. Hafid Hardyanto	Geofencing Technology Implementation for Pet Tracer Based on Android Using Arduino
4	14.00 – 14.15	104	Nur Khabib, Hilal Majdi, Su'ad	Development Of Social Science Teaching Materials By Using A Scientific Approach Based On The Surrounding Environment In Grade IV Students Of SD 1 Jati Kulon
5	14.15 – 14.30	041	M. P. Permana, Didik R., Bayu G.P., M. Amiruddin, Y. V. Yoanita	Development of Integrated Online Learning Content Distribution Module Based on Social Media for Beginners Online Teachers in Creating Learning Content Due to The Covid-19 Pandemic
6	14.30 – 14.45	148	Muhammad Imam Suwiji, Murtono, Su'ad	Science-Based Character Building
7	14.45 – 15.00	083	Novianti Retno Utami, Windi Wulandari Iman Utama, Herdi Handoko	Development of a Multirepresentation-Based Learning Model to Increase the Emotional Intelligence of 5 - 6 Years Old Children
8	15.00 – 15.15	084	L S Nadia, A Sutakwa, Suharman, D Amrih, A N Syarifah	Training of Frozen Cassava (Manihot esculenta) Processing to Increase Selling Value
9	15.15 – 15.30	100	Danang Widyawarman	Subsurface Identification Campus I University Of PGRI Yogyakarta using The Microtremor Wave Method

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ROOM 2

Moderator: Andi Dian Rahmawan, M.A

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	102	Silvia Indriani, Sri Utaminingsih, Mohammad Kanzunnudin	Planting Self-Confident Characters Assisted By Technology And Science Through Reading Activities
2	13.30 – 13.45	002	Setyo Eko Atmojo, Beny Dwi Lukitoaji, Taufik Muhtarom	Improving Science Literation and Citizen Literation Through Thematic Learning Based on Ethnoscience
3	13.45 – 14.00	005	Puji Handayani Putri, Anis Febri Nilansari	The Information System Development of Prescription Screening Management in Public Health Center I Kotagede Yogyakarta
4	14.00 – 14.15	140	Wawan Shokib Rondli, Endang Danial, Sapriya	The Impact of Gusjigang: Production Technique, Skills and Independence of Citizens through Longlife Learning
5	14.15 – 14.30	009	T Heru Nurgiansah, Sigit Handoko	The Role of Cyber Crime Polda DIY in the Fight Against Online Prostitution
6	14.30 – 14.45	129	Indah Ariftian, Ahmad Hilal Madjdi, Murtono	Science-Based Quantum Learning Models In Elementary School
7	14.45 – 15.00	019	Luqman Hidayat, Yanuar Bagas Arwansyah	Application of Assistive Technology for Disabilities in Disaster Mitigation Training
8	15.00 – 15.15	071	Arista Natia Afriany, Faizal Ardiyanto, Ahsan Sumantika, Adhi Prakosa	Technical guidance to increase entrepreneurial capacity in feather duster SMEs, Karanglo village, Klaten Selatan district
9	15.15 – 15.30	154	Ahmad Shofa, Su'ad, Murtono	Development Of Learning Media Technology Based On Natural Science Local Wisdom Materials

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ROOM 3

Moderator: Ekha Rifki Fauzi, M.T.

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	044	Tri Siwi Nugrahani, Harlina Safitri, Sulkhanul Umam, Evi Grediani	Improvement of Social Manufacturing Data Performance On Industry 4.0 Era
2	13.30 – 13.45	121	Ahmad Shofa, Su'ad, Murtono	Development of Learning Media Technology Based On Natural Science Local Wisdom Materials
3	13.45 – 14.00	078	S C Ningsih, T Sunanti	Developing Student Worksheet for Learning Independence
4	14.00 – 14.15	136	Yoga Heri Supratno, Murtono, Mochamad Widjanarko	The Influence of Student Motivation, School Environment, on Student Learning Achievement
5	14.15 – 14.30	080	Ramdhan Harjana, Dwi Putri Fatmawati	Utilization of NON B3 Waste as Learning Media in Online Class During the Pandemic
6	14.30 – 14.45	149	Hariyanto, Sri Utaminingsih, Santoso	Analysis of TBLA (Transcript Based Lesson Analysis) Sains Mastery of Mathematical Concepts
7	14.45 – 15.00	092	Nurirwan Saputra, Meilany Nonsi Tentua, Ratna Purnama Sari	The Development of Web-Based Correspondence Information Systems in University
8	15.00 – 15.15	067	M.M. Endang Susetyawati, Christina Eva Nuryani	Development Of High Order Thinking Skill High School Class Description
9	15.15 – 15.30	157	Noor Khamidah, Sri Utaminingsih, Mohammad Kanzunnudin	Utilization of Information Technology For Kudus Local Values

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ROOM 4

Moderator: Dr. Septian Aji Permana, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	040	Siti Maisaroh, Nafisah Endahati	The Implementation of School Management in Preparing Budget Palnning at Elementary Schools in Bantul Yogyakarta
2	13.30 – 13.45	144	Anna Yuliwijayanti, Santoso, Achmad Hilal Madjdi	Manipulative Media Technology for Addition and Subtraction of Integers in Elementary Schools
3	13.45 – 14.00	086	Rani Eka Diansari, Frisca Dwi Agustin, Dekeng Setyo Budiarto, Ratna Purnama Sari, Yennisa	The Impact of Budgeting Participation, Public Accountability, Internal Control Systems, and village Financial Systems (SISKEUDES) on village Managerial Performance
4	14.00 – 14.15	106	Sulistiyoningsih Astriani R, Sri Utaminingsih, Sri Surachmi	Development of Ethno-mathematics based Mathematics Teaching Material Technology: A Needs Analysis
5	14.15 – 14.30	048	Okti Purwaningsih, Puguh Bintang Pamungkas, Dede Beny, Melinda Oktavia	Response Of Soybean Growth In Sandy Coastal Soil To Seaweed Compost And Biochar Application
6	14.30 – 14.45	116	Mita Kurnia Ulfah, Sri Utaminingsih, Irfai Fathurrohman, Sekar Dwi Ardianti	Thematic Textbook Based on Local Wisdom Combined with Animation Media Using Barcode Scanning Technology
7	14.45 – 15.00	087	Mahilda Dea Komalasari, Nina Widyaningsih	Teaching Material Based on Indegeneous System with Journalism Approach as a Model of Thematic-Integrated Learning for Student in Primary School
8	15.00 – 15.15	049	Vezir Ashyrnepesov, Victor Novianto	Contributing Factors to the Implementation of Guidance Process at Kesatuan Bangsa Bilingual Boarding School
9	15.15 – 15.30	159	Siti Nor Naimah, Suad, Sri Utaminingsih	The Leadership of Schools To Improve Teacher Performance In Al-Amin Kids Park

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ROOM 5

Moderator: Bintang Wicaksono, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	021	Sukadari, Sunarti, Yulian Agus Suminar, Haryanto	The Implementation Of Portfolio Assessment In Assessing Integrated Social Science Learning Results Of Inclusion Basic School
2	13.30 – 13.45	054	E Sutanta, EK Nurnawati, C Iswahyudi, RA Kumalasanti	The Model Prototype of WebGIS-based for Organizational Asset Management
3	13.45 – 14.00	122	Sustiningsih, Sri Utaminingsih, Santoso	Development of Science Teaching Materials Based on STEM: A Needs Analysis
4	14.00 – 14.15	024	Ratna Purnama Sari, Yoga Prasetya Nugraha, Dekeng Setyo Budiarto, Rani Eka Diansari, Yennisa	How IT improve information quality of governmental financial statement
5	14.15 – 14.30	145	Mufaridah, Santoso, Achmad Hilal Madjdi	Thematic Learning Module Technology Based on Local wisdom
6	14.30 – 14.45	060	Sunggito Oyama, Aditya Wahana, Rudha Widagsa	A Web Based E-Archives Information System Design in Universitas PGRI Yogyakarta
7	14.45 – 15.00	138	Anton Widiyatmoko, Sri Utaminingsih, Santoso	Android-based Math Learning to Improve Critical Thinking
8	15.00 – 15.15	043	Muhammad Iqbal Birsyada, Siswanta	The Innovation of Nation Character Education Based on Historical Values of the Struggle of Pangeran Sambernyowo in the Era of Society 5. 0
9	15.15 – 15.30	161	Henri Nurhamid, Murtono, Sri Utaminingsih	Development of social studies teaching materials based on local wisdom of the Samin Society Class V Elementary School

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ROOM 6

Moderator: Rianto, M.Kom

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	020	Supri Hartanto, Septian Aji Permana, Yitno Pringgowijoyo	Mind Mapping Based Mobile Learning System to Increase Student Creativity
2	13.30 – 13.45	134	Wiji Lestari Candra Suci, Murtono, Suryani, Fitri Budi	Constraints in Implementing Online Learning during the Covid-19 Pandemic
3	13.45 – 14.00	030	Rifki Irawan, Sri Wiyanah	Asynchronous Peer Feedback In EFL Writing
4	14.00 – 14.15	105	Oktri Suhartati	Flipped Classroom Learning Based on Android Smart Apps Creator (SAC) in Elementary Schools
5	14.15 – 14.30	076	Azhumna Hafidzatulistya, Padrul Jana	Mathematics Teachers' Perceptions of Using the Internet for Online Learning
6	14.30 – 14.45	113	Anisatun Hidayatullah, Su'ad, Mohammad Kanzunnudin	The Role of The Nawangsih Folklore in The Education of Elementary School Children in The Era of Technology
7	14.45 – 15.00	093	Ida Setiani, Meilany Nonsi Tentua, Sunggito Oyama	Prediction of Banking Stock Prices Using Naïve Bayes Method
8	15.00 – 15.15	004	Jaluna Febry Try Atmaja, Marti Widya Sari, Prahenusa Wahyu Ciptadi	Developing Application of Automatic Lamp Control and Monitoring System using Internet of Things
9	15.15 – 15.30	163	Kintoko, Titis Sunanti, Koryna Aviory, Hodiyanto, Siti Suprihatiningsih	Analysis of Students' Reasoning in Answering Number Stories using Realistic Mathematics Approach

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ROOM 7

Moderator: Theofilus Bayu, M.Sc

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	008	Saptaningsih Sumarmi, Heru Kurnianto Tjahjono	Organizational Citizenship Behavior as Antecedents and Outcome In Era Technology
2	13.30 – 13.45	126	YulitaAyu Suryani, Sri Utaminingsih, Achmad Hilal Madjdi	Needs Analysis of Picture Story Book using Augmented Reality Technology
3	13.45 – 14.00	039	Paiman, Sukhemi, Nina Widyaningsih	Weed control technology to increase growth and yield of mungbean (Vigna radiata L.) in soils types
4	14.00 – 14.15	142	Siti Zulifah, Murtono, Santoso, and S Masfuah	Content validity of Android-Assisted ProblemBasedLearning-Oriented Illustrated Stories Teaching Materials
5	14.15 – 14.30	042	Wibawa, Titik Mulat Widyastuti	Improving Beginning Reading Ability By Using Macromedia Flash Application Media in SD. Klopo Sawit, Bangun Kerto Sleman
6	14.30 – 14.45	110	Aris Suwanggono, Murtono, Irfai Fathurohman	Analysis of The Need for Ethno-Digital Module Development Based on Language Politeness
7	14.45 – 15.00	064	Juang Kurniawan Syahruzah, Rifki Irawan	Social Media-Based Learning in Preparing Year-End Assessment Tests of English and Mathematics Subjects for Islamic Boarding School Students
8	15.00 – 15.15	070	D S Rini, I Sriliana, P Novianti, P Jana, S Nugroho	Spherical K-means method to determine earthquake clusters
9	15.15 – 15.30	099	Aldrin Febriansyah, Eka Widyaningsih, Radiaswari, Rachmat Wahyu Prabowo, Adinda Rafika Dani	Open Space Development Assistance at Rawa Kalibayem Tourism Area, Ngestiharjo Village, Kasihan, Bantul
10	15.30 – 16.00	165	Sukhemi, Ernawati	Determining Factors of Budgetary Slack in Local Governments

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ROOM 8

Moderator: Juang Kurniawan, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	088	Fitri Susilowati, Suryanto	Forecasting LQ45 Shares Using ARIMA Method aim the COVID-19 Pandemic in Indonesia
2	13.30 – 13.45	038	Zidni Husnia Fachrunnisa, Baniady Gennody Pronosokodewo	Optimization Of The Bersih Indah Muja Muju Waste Bank Management System
3	13.45 – 14.00	128	Avif Septiana, Mohammad Kanzunnudin, Murtono	Illustrated folklore books as a simple technology to foster a culture of literacy
4	14.00 – 14.15	045	Muhammad Badri	Adoption of innovations online tutoring apps on high school students
5	14.15 – 14.30	022	Theofilus Bayu Dwinugroho, Yaning Tri Hapsari, Kurniawanti	Greenhouse Automation: Automated Watering System for Plants in Greenhouses using Programmable Logic Control (PLC)
6	14.30 – 14.45	111	Dinar Ayu Mirunggan Sari, Murtono, Irfai Fathurohman	The Usage Of Sunda Manda Media Based On Visualization Auditory Kinesthetic To Improve Motoric Skills
7	14.45 – 15.00	057	N Setiani, B R Aditya, I Wijayanto, A Wijaya	A Study On Awareness Of Bibliographic Management Software For The Academic Writing Activity In Higher Education
8	15.00 – 15.15	091	Rosalia Indriyati Saptatiningsih, Setia Wardani, Marti Widya Sari	Applying information and communication technology on learning model innovation of character education
9	15.15 – 15.30	018	H Wiranota, T T Wijaya	The International Students' Perception Towards Online Learning Using The Tencent Meeting During Covid-19 Outbreak
10	15.30 – 16.00	168	Laeli Nur Hasanah, Rosmauli Jerimia Fitriania	Effect of Frying on The Nutritional Composition of Catfish Nuggets (Clarias gariepinus) Substituted by Modified Cassava Flour (Mocaf)

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ROOM 9

Moderator: Laela Sagita, M.Sc

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	062	Victor Novianto, Ibnu Romadhon	Social Changes After Transmigration In South Sumatera Since 1990
2	13.30 – 13.45	017	Sri Wiyanah, Rifki Irawan, Juang Kurniawan	Using PPP Method in the Process of Online Training and Strengthening EFL Teachers' Pedagogic Competence
3	13.45 – 14.00	056	N Fajrie, I Purbasari, D Setiawan	Analysis of the Wood Production Machine Process for the Application of Wayang Klitik Technology
4	14.00 – 14.15	058	A Iradianty, B R Aditya	Student Awareness of Digital Payment Services (Case Study in Indonesia)
5	14.15 – 14.30	063	Suharman Suharman, Sutakwa Adi, Nadia Lana Santika	Effects of Sucrose Addition to Lactic Acid Concentrations and Lactic Acid Bacteria Population of Butterfly Pea (Clitoria ternatea L.) Yogurt
6	14.30 – 14.45	025	Yune Andryani Pinem	Extrinsic Motivation Influencing Vocational Students' English Achievement on Hunting Bule Before and During Pandemic
7	14.45 – 15.00	028	Margala Juang Bertorio, Rahmat A. Hi Wahid, Nurul Jannah	Overview of Knowledge Levels of Osteoarthritis in Communities in Banjarwaru, Gilangharjo, Pandak, Bantul, Yogyakarta
8	15.00 – 15.15	012	Sri Widodo, Novi Andriyani, Hari Purnama, Vidya Vitta Adhivinna, Ratna Purnama Sari	The effectivity of accounting information system towards employee performance
9	15.15 – 15.30	099	Aldrin Febriansyah, Eka Widyaningsih, Radiaswari, Rachmat Wahyu Prabowo, Adinda Rafika Dani	Open Space Development Assistance at Rawa Kalibayem Tourism Area, Ngestiharjo Village, Kasihan, Bantul
10	15.30 – 16.00	170	Idris, E Utami, A D Hartanto, S Raharjo	Systematic Literature Review of Profiling Analysis Personality from Social Media
11	16.00 – 16.15	171	Yennisa, Ita Kartika, Ratna Purnama Sari, Rani Eka Diansari, Dekeng Setyo Budiarto	The Barriers of Innovation: Empirical research at MSMEs in the Special Region of Yogyakarta

3. Program Book

THE 2nd UPY INTERNATIONAL CONFERENCE ON APPLIED SCIENCE AND EDUCATION 2020

UPY | Universitas PGRI Yogyakarta

" The Challenges of Science & Technology Innovation in Society 5.0 "

PROGRAM BOOK

CONFERENCE DAY

November 3th – 4th, 2020

ONLINE

UPINCASE

Scopus Google Scholar IOP Institute of Physics

PREFACE

Dear distinguished Authors and Guests,
The organizing committee warmly welcome you to 2nd UPY International Conference on Applied Science and Education (UPINCASE), held on 3 – 4 November 2020, Yogyakarta, Indonesia.
On behalf of 2nd UPINCASE, we would like to thank all the authors that contributed to this conference. We would like to extend our special gratitude to the Keynote Speakers who support this conference.

1) Prof. Tai-Chien Kao (National Dong Hwa University, Taiwan)
   Theme: Science and Technology for Future Education
2) Prof. Wasino (Universitas Negeri Semarang, Indonesia)
   Theme: Social Transformation in Society 5.0
3) Dr. David Nwanna Dumbiri (University of Benin, Nigeria)
   Theme: Information and Technology for Sustainable Development
4) Prof. Suzuki Takashi (Kobe University, Japan)
   Theme: Business and Services Transformation in Society 5.0
5) Dr. Arman Shah bin Abdullah (Universiti Pendidikan Sultan Idris, Malysia)
   Theme: Innovation of Educational Technology
6) Dr. Paiman (Universitas PGRI Yogyakarta, Indonesia)
   Theme: Technology Development to Increase Crop Production

After the peer review process, the submitted papers were selected on the basis of originality, significance and clarity for the purpose of the conference. We hope that the conference results constituted significant contribution to the knowledge in these up to date scientific field. The topics covered in this conference include Engineering, Information Technology, Technology for Education, Applied Science, and Science Education.
We will be committed ourselves to make this conference more and more professional with fully and enjoyable academic research and discussion platform for authors and attendees. Sincerely as always, we look forward to your attention and support to the next UPINCASE.

With our warmest regards,
Marti Widya Sari

Conference Chair
25 October 2020
Yogyakarta, Indonesia

Rector's Speech Of Universitas Pgri Yogyakarta

International Conference UPY – Online (2nd UPINCASE, November 3-4, 2020)

Assalamualaikum warahmatullahi wabarakatu
Peace be upon all of us.

1. The honourable, Prof. Kao, Tai-Chien (National Dong Hwa University, Taiwan). With the Paper tittle : Science and Technology for Future Education
2. The honourable, Prof. Arman Shah Bin Abdullah (UPSI, Malaysia). With the Paper tittle Innovation Of Education Technology
3. The honourable, Prof. Wasino (Universitas Negeri Semarang, Indonesia). With the Paper tittle: Social Transformation in Society 5.0
4. The honourable, Prof. Suzuki Takashi (Kobe University, Japan). With the Paper tittle: Business and Services Transformation in Society 5.0
5. The honourable, All conference participants we are proud of.
6. The honourable, all of the members of committee of the international conference .

Praise our gratitude for the presence of God, the Almighty God who has given His mercy and guidance. Today, we can participate in this international conference with the theme of ***The Challenges of Science and Technology Innovation in Society 5.0*** in Universitas PGRI Yogyakarta, Indonesia virtually. This international conference is held for two days, November 3rd- 4th , 2020. I would like to say thank you very much to all keynote speakers who have taken the time and are willing to share the material.

To all of the conference participants, I congratulate you on attending the conference. Hopefully, this conference activity will give benefit to all of us. By pronouncing Bismilahirahrahirrohim, today's conference is declared open.

Thank you,

Wassalamualaikum warahmatullahi wabarakatu

Yogyakarta,November 3rd, 2020

Rector

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KEYNOTE MATERIAL

1.1 SCIENCE AND TECHNOLOGY FOR FUTURE EDUCATION

Prof. Tai-Chien Kao
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Professor Kao received the Ph.D. degree in educational technology from Purdue University, USA, in 1996. Since then, she joined the faculty of the Institute of Education at Dong Hwa University, Taiwan, R.O.C., and is currently a Professor of the Department of Education and Human Potentials Development. Her research work focuses on technology-based scaffolding in the context of online learning and mobile learning environment. Related interests include the design, development, implementation, and evaluation of technology-based instructional strategies that promote students' independent learning and self-regulation.

Professor Kao has also undertaken several Taiwan Ministry of Education supported IT projects in east Taiwan, including Digital Partner Online Tutoring Program, Technology Enhanced Self-Regulated Learning Program, etc. She is also participating in the STEAM project and the VR Application in Teaching project as the counselor and evaluator.

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Abstract. In this article, the five imminent trends of science and technology were proposed. Each presents some of the boundless exciting possibilities for future education. For each trend, the characteristics of the specific new technology and the benefited pedagogy of learning were discussed. The article also introduces the related on-going projects conducted in Taiwan. These projects describe how we prepared for future education in Taiwan.

Technology has rapidly changed every facet of our society, including the education industry. Today students grow up with internet-connected devices at home and in the classroom, which changes the way they

learn. Future education technology will transform learning by giving teachers and students a variety of new tools to work with.

While the future of education will be driven in large part by technology, ensuring the new teaching tools are put to use most effectively requires a new generation of educators who appreciate the importance of human interaction in educational settings.

In this article, I propose the five imminent trends of science and technology, each presenting some of the boundless exciting possibilities for future education.

1. **Interdisciplinary Learning- STEAM Education**

Interdisciplinarity has become increasingly important as a means of attempting to address complex, real-world problems and grand challenges. Interdisciplinary learning is the way we cultivate our students to possess the competency of interdisciplinarity. Interdisciplinary learning requires learners from two or more disciplines to bring their approaches and adapt them to form a solution to a new problem. Due to the complexity of the situation and the multiple disciplines involved, technology focuses on facilitating the need for interdisciplinary approaches is fundamental. STEAM education is a remarkable attempt of interdisciplinary learning approach, emphasizes integrating knowledge and skills associated with science, technology, engineering, art and mathematics. On the other hand, interdisciplinary teaching involves exploring content or solving a problem by integrating more than one academic subject. It is a holistic approach to education and requires the close collaboration of multiple teachers to create a more integrated, enhanced learning experience for students across multiple classes.

Advanced Interdisciplinary^{+} is a project initiated by Taiwan's Ministry of Education starting from 2017 to promote interdisciplinary teaching and learning with innovation technology, such 3D printer, Robot, etc. In this project, school teachers, working with university professors, develop integrated (STEAM) curricula to design PBL projects with students, synthesizing their learning by integrating knowledge and concepts from multiple disciplines. Students not only gain a deeper conceptual understanding of the material, but also have authentic opportunities to apply their learning to solve real world issues through their direct action.

2. **Smart Learning- Smart Learning** Classroom

Smart learning is a broad term for education in today's digital age. It reflects how advanced technologies are enabling learners to digest knowledge and skills more effectively, efficiently and conveniently. Smart Learning Classroom is a classroom infrastructure to facilitate smart learning. It includes wireless technologies, remotely accessible switches and routers, and collaboration tools to create an "intelligent" environment for the invention of real-world Internet of Things (IoT) products, services, and experiences by students. Students in the smart learning classroom usually equipped with mobile devices, such as tablets, allowing them to work individually or in groups. Creation takes place in different venues. The next generation of instructors would be wise to consider ways to take advantage of the smart learning classroom in their curriculum to create a variety of learning opportunities for their students.

In Taiwan, the Forward-Looking Infrastructure Plan is a project funded by Taiwan government to build up the essential infrastructure environment to support smart learning and teaching in elementary and secondary schools. It enables teachers to easily use cloud-based teaching tools in classrooms or participating the community to the co-creation of novel pedagogies.

3. **Real-time Distant Learning- Live Streaming for Education**

The world needs online education now more than ever before. In the meantime, communicating in real-time from a distance has never been easier. There are numerous new platforms and applications (apps) available free-of-charge that are easy-to-use and facilitate seamless communication between geographically distant people with access to a smart phone or laptop. Live streaming is the technology to realize real-time distant learning. It refers to online streaming media simultaneously recorded and broadcast in real time. Live streaming has made education more accessible to people around the world. As live streaming teaching becoming a main trend for the future education, the instructors not only have to find their new normal getting creative with minimal equipment to teach in front of a camera, but also have to create a classroom-like atmosphere and allow for real-time interaction and participation.

One remarkable live streaming project funded by Taiwan's Ministry of Education is especially designed for rural education, the Digital Learning Partner Program. It allows college students to be one-on-one after-school on-line tutors for students in rural area. Another interesting live streaming project launched by Taiwan Institute for Information Industry, Learning Beyond School Alliance, is designed for the young second generation of new immigrants from southeast Asia to learn their parents' mother language. A platform was created to provide live-streaming classes by professional teachers for children at different schools with the same language learning need.

4. Adaptive Learning- AI in Education

Adaptive learning comes from the idea of personalized learning that may be difficult for teachers to provide but may be necessary to fully engage each student. With the advent of artificial intelligence (AI) in education, teachers and schools can take advantage of tools that are highly data-driven and adaptive to individual students' needs. Adaptive learning is the delivery of custom learning experiences that address the unique needs of an individual through just-in-time feedback, pathways, and resources. It is in fact the ability to provide personalized services with AI in educational and corporate settings. The learning platforms uses computer algorithms, such as artificial intelligence and are trained to understand the strengths, weaknesses, learning styles, and proficiency of the student before providing them with the necessary learning material and resources. Adaptive learning technology aims to emulate and support the talents of great educators to provide the best possible learning experience for every single student. It helps scale the benefits of adaptive learning to tens, hundreds, or thousands of students at a time.

Taiwan's Ministry of Education have developed an adaptive learning platform to facilitate adaptive teaching and learning since 2018. Among the basic subjects, the Mathematics is the most well established one. A knowledge-structure-based concept map is constructed based on the Mathematics Curriculum Guidelines of 12-Year Basic Education. For each concept node on the map, diagnostic items for adaptive dynamic assessment and instructional video for adaptive learning were designed.

5. Authentic Learning- AR and VR in Education

Authentic learning is generally considered the most effective way to learn. It is an instructional approach that allows students to explore, discuss, and meaningfully construct concepts and relationships in contexts that involve real-world problems and projects that are relevant to the learner. Two of the major areas of next-wave technology, augmented reality and virtual reality (AR/VR), now make it possible to offer students authentic learning experiences ranging from experimentation to real-world problem solving. Augmented reality devices enhance real-world materials, such as making a map jump off a page, while virtual reality products create an immersive digital world in which students interact in virtual 3D worlds that enhance learning experiences.

In Taiwan, a recent research project adopts AR technology to facilitate concept understanding in lab experiments of Chemistry and Physics. It allows students to interact with augmented reality and physical

objects and explore the related science principles. Another interesting educational practice is to adopt VR technology to create a virtual practice factory for auto maintenance training. It simulates the situation and tasks that a technician might encounter in a real practice.

Talking about science and technology for future education, it is important to recognize the role that a human teacher will always play in the classroom. They have a unique and personal insight into each learner's progress, serving as a role model and local expert, and providing inspiration in a way technology itself cannot.

Combining the learning science and innovation technology, we can leverage the best of what digitally enhanced and human-driven education have to offer, creating learning experiences that keep pace with the digital skills demanded by the market. In turn, affecting individual lives, supporting business and transforming global communities.

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1.2 INDONESIA: FROM INDUSTRIAL REVOLUTION TO SOCIETY 5.0

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He was born at Wonogiri Regency, Central Java Province, Indonesia, 5 August, 1964. He is to be head of editorial boards of Historical Studies Journal "***Paramita***", which published by History Department, Unnes incooperation with Association of Indonesian Historian (***Masyarakat Sejarawan Indonesia***). One of the fenomenal book was "Indigeneus Capitalism: Sociatal Change of Mangkunegaran 1861-1942" published by LKis (2008).

Prof. Dr. Wasino also introducing some research in social and humanities aspects. From this researchs has been published several books, for example: *Wong Jawa dan Wong Cina*: *Liku-liku Hubungan Sosial antara Etnis Jawa dan Tionghoa di Surakarta* (2006), *Tanah, Desa, dan Penguasa: Sejarah Pemilikan Dan Penguasaan Tanah di Pedesaan Jawa* (2006). Another books are: *Berjuang Menjadi Wirausahawan: Sejarah Kehidupan Kapitalis Bumi Putra Indonesia* (2008), *Sejarah dan Nilai Kephlawanan Kota Magelang* (2009), *Pola Pemukiman Tradisional di Jawa* (1997/1998), *Nasionalasasi Aset-Aset*

Belanda menjadi Aset BUMN Indonesia (2014), *Kepemimimpian dalam Kebudayaan Indonesia* (2013), *Modernisasi di Jantung Budaya Jawa* (2014). Unpublished researchs also has been done, there were: *Sejarah Hari Jadi dan Perkembangan Kabupaten Tegal* (1995), *Kebijakan Ekonomi dan Perkembangan Tanaman Pangan di Surakarta, Perbandingan antara Politik Etis dan Orde Baru* (1996), *Reorganisasi Agraria di Surakarta dan Dampaknya terhadap Kemakmuran Petani* (1998), *Kemajemukan dan Resolusi Konflik* (1999), and *Pemerintahan Desa di Surakarta Pasca Reorganisasi Agraria 1912-1942 (2003).*

Prof Wasino make some research in history of Indonesia, Malaysia, and Netherlands. Several articles are published in *Paramita*, Historical Study Journal own by History Department Semarang state University, *Journal of Humanities*, *Lembaran Sejarah*, own by Faculty of Humanities, Gadjah Mada University, and *CIJHAR* . Some of research finding has been published in journals, there were: Mangkunegara IV, Raja Pengusaha Pendiri Pabrik Gula Mangkunegaran (Jurnal Humaniora UGM (2004), *Nasionalisasi Pabrik Gula Mangkunegaran* (2005), From Pluralism to Multiculturalism in Indonesia (Paramita, 2013), Modernization of Mangkunegaran Kingdom *(Paramita, Historical Studies Journal, Volume 22, no.1),* Nationalization of Western Entreprise to Indonesian Gouvernment for Self Managing Economy (Berdikari), *Paramita, Historical Studies Journal, Volume 25, no. 1.,* The Plantation Capitalism and Peasant Live in Java at the end of Ninnteenth Century to the beginning of Twenteeth Century, Central India Journal of Historical and Archeological Researh (*CIJHAR*), Volume 5 isssue 18, April-June 2016. The current article "Plantation and the Pesant Economy in Java Indonesia" will be published on Asian Agri History, India on October 2016. ***The Author has been present the paper on the 5th HOMSEA's Conference in Manila 2014 with the title "the Health Service at the Mangkunegaran Sugar Plantation***".

ABSTRACT

This article will discuss the development of the industrial revolution and its impact on social change in Indonesia. There are four stages of the industrial revolution. First, it happened in the 17th century in Britain, which was marked by the invention of machines to replace human jobs. Currently, we have entered the industrial revolution stage 4.0, which is marked by the use of the internet as the basis for industrial activities and other human activities. The industrial revolution that happens in the Western world affects Indonesia, causing development to lag behind technological developments. In every development stage of the industrial revolution, Indonesia tends to be a consumer who applies technology products. In every stage of technological change, Indonesia experiences social changes that develop from a society originally

a *paguyuban* community to a *patembayan* community. When the industrial revolution has been considered boring by technology creators, by presenting Society 5.0, technology places humans at the central technology management in which Indonesia is just entering a period of learning to utilize technology. Covid-19 accelerates the control of the Indonesian people over the digital industry and the internet in economic activities to social relations.
Keywords: industrial revolution, social change, technology utilization, internet, society

A. Introduction

The industrial revolution, in history, is the human ability to change the world rapidly. Revolution was initiated in the "West" (Europe) in the 18th century to the middle of the 9th century, which affected the whole world community. The industrial revolution continued in several stages, until now, it has entered the fourth stage (Industrial Revolution 4.0).

The industrial revolution 4.0 is marked by the birth of digital technology-based information technology. It is hoped that the new technology will drive a world economy to be more efficient and environmentally friendly. Nevertheless, the development of this industry has received criticism from developed countries, such as Japan. This is because its presence has marginalized the humankind role which should be the subject in the implementation of technology.

On the one hand, developed countries have begun to fret due to the emergence of the industrial revolution 4.0, while developing countries or countries that are heading to become developed countries such as Indonesia are still adjusting to the destructive changes caused by the industrial revolution 4.0. Almost all state officials, universities, and economic actors are talking about the industrial revolution 4.0. One of the implementations of Industry 4.0 is the use of the internet in all aspects of human activities.

When the Indonesian people are debating and imagining about the industrial revolution 4.0, suddenly the Covid-19 outbreak appears. As a result of this influenza pandemic, all activities must use the internet, not face-to-face activities so that human communities throughout the world, including Indonesia, are forced to use the internet as a basis for activities in all aspects of life, both in the fields

of economy, politics, education, education and even the arts.

Based on historical data, every phase of the industrial revolution has given birth to human adaptations to the technology produces. Human adaptation to technology has implications for social change in society. Thus, with the birth of the industrial revolution 4.0, it has given birth to human adaptations to the presence of the industrial revolution. Japan, which had already entered the Industry revolution4.0, makes an adaptation by creating a "society 5.0". This article seeks to undertake historical reflection on these adaptations at each stage of the development of the industrial revolution and predictions about society 5.0 as envisioned in Japan.

B. Industrial Revolution and Capitalism of Development in Indonesia

The First Industrial Revolution began in Britain in 1760-1840. The industrial revolution is a new synthesis of the dialectic results between the Middle Ages and Renaissance. Middle Ages (1-14 centuries) emphasize religion as a driving force for human life. Meanwhile, Renaissance (15/16 century) emphasizes the role of the human as a driving force of life (Antromophorah). This emphasis on humans as the center of life gives birth to the Aufklarung era (17/18 century) which suppresses the excellence of thinking, and the human brain develops freely so that it regenerates discoveries in science and technology. This change in paradigm gives birth to application findings in science in the form of rapid technological discoveries.

The industrial revolution is marked by changes in human activities made easier by the presence of new technologies such as machines to replace jobs previously done by humans and animals. Ship technology initially driven by hand and wind power is later replaced by steam power after the invention of the steam engine by James Watt. Since then, the reach of the ships has become even further. In addition, it also encourages the creation of larger ships with greater tonnage. The spinning wheel driven initially by human power is replaced by a machine driven by coal. Land transportation, which is initially driven by horse-drawn carriages, is replaced by trains powered by coal. As a result, the demand for raw materials for iron and coal mining has increased.

The industrial revolution has changed the fabric of society. A feudalistic society becomes an

industrial relationship between the capital owners (the bourgeoisie) and labor owners (the workers). Many rural people move to the cities to work in industrial centers, and rural lands are turned into pastures to support the fabric industry that is growing due to the industrial revolution. The birth of bourgeoisie has led to the birth of democratization in European countries that have entered the industrial revolution.

The industrial revolution has given birth to a new system. Capitalism replaces feudalism and mercantilism. In this system, the bourgeoisie is increasingly thirsty for the interest of multiplying its capital investment. Meanwhile, in industrialized countries, Europe has been full of burdens due to a lack of supply of raw materials, market problems and labor. The impact is by investing outside Europe in a new form of colonialism wrapped in an investment label.

The industrial revolution also had an impact on Indonesian territory. The mercantilism system initially developed by the VOC (The Netherlands Foreign Trade Agency in East Hindi) was transformed into production capitalism during the Netherlands Colonial Government. At the beginning of XIX century, investment was opened in the plantation industry in Java, which was then followed by the Cultivation System in 1830-1870. Plantation industries such as sugar, coffee and tea have become the prima donna or excellent in economic development in Java. In 1870, after the issuance of the agrarian law, Netherlands private capital entered into an investment which was all held by the Government in the plantation industry and its carrying capacity included rail and shipping transportation.

In line with the development of the second stage of industrialization in Europe, at the end of the XIX century marked by the invention of motorized vehicles and the telephone telecommunications devices. Thus, the road network and telephone network are also developed in Indonesia. The birth of motorized vehicles facilitates the transportation of people and goods. Meanwhile, the development of the telegraph telephone has facilitated human communication with very long distances that previously had to be reached by direct contact.

The bad impact of the second stage of industrialization is the exploitation of mining products in colonial countries, including Indonesia. To support the supply of fuel for motorized vehicles, an

adequate petroleum reserve is needed by looking for petroleum sources not only in Java but also on islands outside Java, such as Sumatra and Kalimantan. In addition, there is also the exploitation of supporting materials for small-scale factories and telecommunications equipment from iron, bauxite, and others. Environmental damage occurs in several places in Indonesia due to the mining process on the one hand, and air pollution after the use of fossil fuels through factories and motorized vehicles on the other.

In two stages of industrialization, Indonesia's natural resources have become victims of exploitation, and the Indonesian people have become the working class in their own country. Profits from the process of production capitalism and extraction capitalism are brought to the countries that own capital, the Netherlands and other Western countries that are involved in investment activities. Nevertheless, the Indonesian nation has also begun to recognize new technologies developed in a capitalistic and extractive system that has opened up space for population mobility and the lessons of science and technology in some indigenous peoples which give birth to the nationalism movement.

The third stage of the industrial revolution is marked by automation in several business activities. This stage of industrialization (industrial revolution 3.0) began in the 1970s when computers became the main equipment in human activities. Computers are used in business activities, education, government bureaucracy and other human activities that facilitate administrative work and data storage. Elain is also supported by the use of handheld cell phones and computer-based control technology.

The advent of computers and cell phones has replaced the tradition of typewriters and textual data that had been used in the world of business, government and education. This technological change has changed the performance of education which is all typewriter-based to computer-based. The typewriter industry became closed, which is followed by the dissolution of manual typewriter courses. Likewise, the presence of mobile phones has made communication very personal.

In the following decades, the industrial revolution 4.0 is born, which is a continuation of the industrial revolution 3.0. This revolution begins with the invention and use of the internet. Internet is not only a search engine but can be connected intelligently. It starts from cloud storage (cloud),

smartly connected devices, physical fibre systems, and robotics. Through the use of the internet as a digital technology product, the interconnection between users is possible. In the manufacturing industry, for example, the internet allows interconnection between physical machines and production systems. In the world of education, an interconnection system between the Ministry of Education and all tertiary institutions in Indonesia has resulted, which contains data on lecturers, academic performance, ranks, and so on.

The digital industry born in the revolution 4.0 has not just an ordinary business. Several benefits obtained from this digital industry are:

1. *Internet of thing* is a concept where a physical device or machine connected to an internet network can transfer data without human interaction;
2. *Big data* is a term that describes a large volume of information, whether structured or not;
3. *Augmented reality* is a technology that collaborates virtual objects in two or three dimensions into a real three-dimensional sphere and then projects them in real-time;
4. *Cybersecurity* is an activity to increase information security to prevent cyber-attacks. Cyber-attack is a deliberate activity that targets information systems to damage, change or steal information availability, integrity, and confidentiality;
5. *Artificial intelligence* is a computer technology that allows machines to have human-like intelligence. Starting from carrying out tasks and making decisions appropriately without human assistance. Artificial intelligence can study and analyze data on an ongoing basis;
6. *Addictive manufacturing* is a 3D printing technology used by the manufacturing industry. Not only as a 3D printer but also as direct digital manufacturing and rapid prototyping;
7. *An integrated system* is a series of processes that connect computer systems and software physically and functionally. This integrated system will unify the sub-system components in a system so that each part can function as a unitary system.
8. *Cloud computing* is a technology that uses the internet as a center for managing, storing data and applications. This technology allows users to obtain the right to access or run programs

via computers and internet networks without installation (https://idcloudhost.com/mengenal-apa-itu-era-revolusi-industri-4-0-dampak-dan-mengatasinya/)

On the one hand, the massive digital industry has made human work easier. However, it has marginalized the role of humans in their lives. Then, industrial relations based on diving machines have made human relations like robots so that human nature does not develop.

C. Globalization Due to the Industrial Revolution

The side effect of industrialization is globalization. Fakih (2002: 211) examined the background of globalization as one of the phases of the long journey of liberal capitalism. Globalization campaigns as an era of the future, an era that promises global economic "growth" and will bring global prosperity to all. Globalization is a continuation of colonialism and developmentalism. The colonialism era is marked by the development of capitalism in Europe, which requires physical expansion to ensure the acquisition of raw materials. The independence of the colonized countries marks the era of developmentalism. However, it is still under pressure from the colonizing countries through the scientific paradigm that side with the colonialists. Meanwhile, the third era is globalization which is marked by liberalization in all fields imposed through global financial institutions or international economic institutions.

Another opinion about the background of globalization is put forward by Martin Khor (in Winarno 2008: 2-3) who mentioned that there are four causes for the emergence of globalization. First, liberalization policies and regulation of state finances that open up the flow of international funds into the country. This policy is not only adopted by developing countries but also implemented by developed countries. Second, technological developments, particularly the development of electronic communication technology facilitates the movement of large amounts of funds across national borders. Third, the emergence of new monetary instruments (for example derivatives) and monetary institutions (for example credit supervisory companies). Fourth, the collapse of the international fixed exchange rate system that allows profit and currency exchange speculation.

The wave of globalization increased sharply in the 1980s. The impact of globalization has touched the system, process, actor and event levels. In its development, globalization is not as smooth as we imagine. On the one hand, globalization contains elements of integration, interdependence, the openness of multilateralism, and interpenetration. While, globalization also contains the process of disintegration, autarchy, unilateralism, closure, and isolation. In the process of globalization, it leads to globalism, spatial compression, universalism, homogeneity, and convergence. However, it also creates fragmentarization that leads to nationalism, regionalism, spatial differentiation, separatism, heterogeneity and divergence.

Globalization can also be defined as a process of growth and development of economic activity across national and regional boundaries. This is shown through the movement of goods, information, services, capital and labor through trade and investment. Scholte examined several definitions meant by globalization, including the following:

(1) *Internationalization*. Globalization is defined as increasing international relations activities. Although each country still maintains its identity, it becomes increasingly dependent on one another.

(2) *Liberalization*. Globalization is also defined as the diminishing boundaries of a country. For example, the issue of export/import prices, foreign exchange traffic and migration.

(3) *Universalization*. The wider the spread of material and immaterial throughout the world, this is also interpreted as globalization. Experience in one place can become an experience all over the world.

(4) *Westernization*. Westernization is a form of universalization in which the spread of culture and ways of thinking is increasingly widespread so that it affects globally.

(5) *Transplanetary and supraterritorial relationships*. This fifth definition is slightly different from the previous four definitions. The four previous definitions identify that each country still maintains its status, but the fifth definition states that the global world has its own status, not just a combination of various countries

Globalization, as a phenomenon of global flows in human civilization, has transformed people's

lives economically and socio-culture. The ongoing flow of globalization causes a person or group of people or a country to be connected and need each other. This is also what causes foreign cultures to enter a country easily. It is easy for the people of a nation to accept a foreign culture in their lives because these foreign cultural elements bring convenience to the life of the people of that nation. In general, cultural elements that bring about socio-cultural changes and is easily accepted by society for several reasons. First, this cultural element brings great benefits. Second, the equipment is easy to use and has benefits. Third, cultural elements easily adapt to the conditions of the community that accept these elements.

The era of globalization has changed the world order in which every side of life in any part of the world can be quickly conveyed and witnessed by people wherever they are. Globalization has a positive influence from a political aspect, such as open and democratic governance. In the economic aspect includes opening up international markets, increasing job opportunities and increasing foreign exchange. In the socio-cultural aspect, we can imitate good thinking patterns such as a high work ethic and discipline and science and technology from other developed nations. However, globalization cannot be separated from the negative effects it brings in various aspects of life as well. From an economic perspective, the loss of love for domestic products due to a large number of foreign products (such as McDonald's, Coca Cola, Pizza Hut, etc.) has flooded Indonesia. Various products of clothing, boards and imported goods fill the domestic market regardless of the fate of local producers who have difficulty competing with these imported products.

The most concerning aspect due to the influence of globalization is the socio-cultural life of the people, which have been known as traditional communities that live in harmony, simplicity, diligence, mutual cooperation and religion. Society exhibits individualism, a crisis of national values, is more concerned with the interests of individuals or groups than for the interests of the State or government.

Indonesian society has gradually turned into a consumer society from the flow of production goods from capitalist countries, which are commonly purchased on credit, a luxurious lifestyle filled with consumptive and hedonistic attributes. The dream of a just and prosperous society seems utopian during a large part of a society plagued by debt at cellphone counters, housing developers, motorbike

and car showrooms, electronics stores, computer shops, pawnshops, credit distribution banks, and so on.

Globalization also affects society because it brings new values that can influence the people of a nation unconsciously forgetting the ideology of their country. The strong influence of global cultural values, of course, creates social problems, such as sharpening social inequalities that can lead to social jealousy, sharpening racial conflicts, waning indigenous cultural values and so on.

D. Diffusion of Revolution 4.0 and its intervention in Society 5.0

The industrial revolution for four stages, from the first stage to the industrial revolution (4.0) stage, on the one hand, has changed the face of the world from "traditional" to modern. Traditional, in the sense of human society, is merely developing traditions that have been adapted from generation to generation. Humans submit to nature, and at best, conform to the rhythms of nature. With technology or technological modernization resulting from every stage of the industrial revolution, humans are not only subject to nature but control, even exploit nature. Technology has made it easier for human activities to carry out their lives.

On the one hand, the industrial revolution has made human activities easier, but in its development, it is not friendly to humanity. The industrial revolution which was the thesis of the Renaissance and Aufklarung, which emphasized humankind as the center of life, turned to place humans as a means of production from capitalism and marginalized humans after modern technological products replaced their functions. The second stage of industrialization has resulted in environmental damage. Fossil power that drives transportation equipment has caused extraordinary congestion on highways, especially in consumer countries, so that it does not cause convenience on the road and human life is only part of the industrial production process. Meanwhile, the industrial revolution 3.0 and 4.0 stages have marginalized humankind and been replaced by a digital system manipulated by the internet. Digital technology has given birth to a new tradition in which the presence of this technology stretches human relationships.

The criticism of the negative impact on the current industrial revolution has given birth to a new

paradigm offered in Japan, namely "Society 5.0". This paradigm offers the use of modern technology-based (AI, robots, IoT, and so on) to be used to serve human needs, not the other way around that humans are the objects of the technology. The aim is to present modern society with advanced technology that can be enjoyed by humans comfortably. Society 5.0 was officially inaugurated on January 12, 2019.

How about Indonesia? When developed countries, such as Japan, Korea, China, America, and others have fully implemented Industry 4.0 Indonesia is just trying to learn about the rapid development in the world revolution. The internet, which has become a driving tool for the new technological revolution, is used by a small part of Indonesian society, especially in big cities and business environments that require high technology and certain social groups. However, with the Covid-19 outbreak, the Government, business world, and education world are forced to use the internet. Since March 2020, internet has become a necessity for Indonesians in various regions, both in villages and cities with all its limitations.

In 2020, Indonesia has entered the Revolution 4.0 era because these natural events accelerate it. However, the impact on the lives of the Indonesian people is not as bad as for developed countries. The internet does not necessarily marginalize humankind, but instead revitalizes Indonesian society which is torn apart by the previous industrial revolution from a *paguyuban* community to a *patembayan* community. With the internet network reaching remote villages and all groups of society, communication through the virtual world that seems to meet directly in all aspects of life, starting from the world of industry, government, and families is facilitated with the help of the internet.

The acceleration of the use of the internet allows the social distance between people to be closed at a relatively low cost. The bureaucratic relationship between the central government and provincial and district/city governments, which is initially slow due to distance and travel costs, is now facilitated by using zoom facilities, Google meetings, Skype, WhatsApp, Facebook, Instagram, and so on. These communication facilities are also used in the business world on a national and international scale. Meanwhile, in the academic world, academic communication has been facilitated, such as focus group

discussions, meetings, seminars, conferences, expert lectures and so on by using the internet network at a lower cost. In short, revolution 4.0 actually has accidentally given birth to a society 4.0 because the presence of the internet has made humans enjoy it.

The presence of the internet strengthens Communality-based Indonesian society. Supporters have now enjoyed religious meetings using the internet previously considered strange. Likewise, family gatherings are held online in the Covid-19 pandemic situation. Humanitarian activities in the form of raising funds are carried out using online promotions such as that carried out by the late singer Didi Kempot through the Kompas TV station. Likewise, art performances can be done using the online system because of the outbreak.

E. Conclusion

The industrial revolution is born from human creativity to make life easier and more comfortable. The industrial revolution begins with the rapid development of technology to produce products for human life needs, especially clothing, food and food. At a later stage, the industrial revolution is related to the transportation revolution to facilitate human mobility. The next revolution is related to communication using mobile phones, followed by a digital revolution supported by the mass use of the internet.

Technological innovations as products of the industrial revolution have spread globally. The globalization of technology is followed by the "culture" behind the technology. However, in the interaction with globalization, there are adaptations with Indonesian culture. As a result, it gives birth to a change in the technology culture which is a mixture of modern technology and local traditions.

1.3 INFORMATION TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT IN VOCATIONAL EDUCATION

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GENERAL INFORMATION

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DEGREE	DATE	GRANTING INSTITUTION
Ph'D Agric. Education.	2011	University of Nigeria, Nsukka
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N,C,E.	1988	College of Education, Agbor
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Cert. in Computer	2009	Information & Communication
Centre, Agbor		
Teachers Reg. cert.	2009	Teachers Registration Council
Of Nigeria		

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Introduction
The term information technology (IT), involves the use of technology to solve problems, create, store, exchange and utilize information in improving livelihood.
Khan (2011) narrated that IT empowers both people and machines with information, which is transformed into knowledge by both people and machines to contributes to sustainable development
What is information technology (IT)
The use of skills, methods and process towards provision of answer to an unanswered question. Crowdstrike, 2020 perceives information technology as all forms of technical know-how used to create, store, exchange and utilize information in its various forms including business data, conversation, still images, motion pictures and microelectronics device

Role of IT in Developed and Developing Countries
Attracting investment.
*Reducing unemployment and poverty.
*Developing regional trade links and boost industrial operation. Among others

Sustainable Development (SD)

Sustainable development is the act of changing an activity so as to maintain a steady level of impact that is not capable of damaging the environment for both the present and future generation

Aims of Sustainable Development (SD)
*End poverty in all its forms everywhere. End hunger, achieve food security and improved nutrition.
*Ensure healthy lives and promote well-being for all at all ages. among others
Steps to Sustainable Development (SD)
Recognize the urgency of the 2030 agenda and seize the momentum. set up clear implementation mechanisms and accountability channels at national and sub narional level. Among others.
Principles of Sustainable Development (SD)
Nations have the sovereign right to exploit their own resources but without causing environmental damage beyond their borders.
Challenges of IT Usage in Vocational Education Towards Achieving Sustainable Development (SD)
•inadequate training facilities and equipment for vocational teachers.
* Poor public impression and indifference to vocational education

Conclusion and Recommendations
IT facilities and equipment for proper teaching and learning of vicational education should be made available by the government

1.4 CURRENT ECONOMIC AND POLITICAL SITUATION IN THE WORLD AND INDONESIA.

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5 Aug. 1938	Born in Manchuria, Nationality Japanese
1962,	BS Economics, University of Tokyo
1962,	Sumitomo Metal industries, Economic Research Dept, Planning Dept
1975,	Singapore Office, Representative Manager
1979,	Manager, Business Research Section
1987,	General Manger, Overseas Investment Dept
1989,	President, Thai Steel Pipe Industries
1991,	Deputy Director, Kashima Steel Works, Sumitomo Metals
1994,	Director, Japan Research Institute, Head of Asian Resaearch Group
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2004,	Retired Toyo university
2003,	Doctorate of Economics, Kobe University

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1996～8,	Guest Professor, Ritsumeikan University, Faculty of Economics
(Japanese Books)	"The Economy of Southeast Asia", Ochanomizu Press Co., 1996.
	"The History and Economy of Southeast Asia." Nihon Keizai Hyouronsha, 2002.
	"The Mystery of Srivijaya". Asahi Krie Co., 2008.
	"The History of Srivijaya－The ancient trade between the East and West, under the tributary system of China." Mekong Publishing Co. 2010.
(English Book)	The History of Srivijaya—under the tributary trade system of China" Mekong Publishing Co. 2012.

Takashi Suzuki

Now the world economy is in confusion under the Pandemic, Wuhan virus or Covid-19, but before this deadly Pandemic, the world economy had been already in long term stagnation. And now the end of 'Globalization and Neo Liberalism' is near at hand. Actually the USA has given up 'free trade'.

（Conclusion）

1.The result of globalization. Advanced countries (the USA, West Europa and Japan) had suffered low growth rate, lost GDP share in the world, no income increment, and high unemployment ratio.

2.. Advanced economies are in long term stagnation for nearly 10 years, before this Pandemic, because, the common people had been paid low wage and house hold consumption had been squeezed. As the result advanced economies got into stagnation.

3.After Pandemic , advanced economies would not revive soon. They must call back their companies from China or diversify their factories to the safer and friendly countries.

4. Advanced countries would establish trade barrier to fend off cheap imports from less developed countries.

5. Less developed countries, except China, will have good chance to invite FDI (Foreign Direct Investment) and they can develop the manufacturing industries.

6. Indonesia has possibility to invite FDI, because Indonesia has large population and natural resources. Indonesia has good working people, with some experience of manufacturing and educational level is comparatively high. The Indonesian government understands how to improve the investment environment for FDI.

(Contents)

1. Historical view of ‘Globalization and Neo-liberalism’.
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3. The result of neo-liberalism and globalization, Current economic situation in the world.
4. New movement of capital of advanced countries. After the end of current big recession of the world economy.
5. Merit of manufacturing compared with agriculture
6. Trade between Indonesia and China. Indonesia can substitute of Chinese imports
7. The prospect of Indonesian future

Chapter 1 Historical view of ‘Globalization and Neo-liberalism’.

Historically the world economy had been severely divided between advanced countries and less developed countries. However, recently the position of advanced countries had declined significantly. The common people of the advanced economies are facing not only the deadly Pandemic but also high unemployment, low wage and poverty.

During this decade, especially since Leman Shock in 2009, advanced countries have suffered low economic growth, or stagnation. On the other hand less developed countries have recorded significant growth. After 2009, Leman Shock in the USA, the growth of advanced countries had suffered low growth rate around 1% level or less and cannot see any sign of higher growth, especially western Europe and Japan. (Around+-1%.) The USA had maintained +2%.

The common people of these countries are anticipating to terminate ‘Globalization and Neo-liberalism’. The main cause is ‘free trade system’, which have been destroying the economy of advanced countries.

Table 1 shows uneven growth of GDP (Gross Domestic Production). Western European countries and Japan, GDP growth became nearly 1 per cent before Pandemic. In this year, 2020, OECD estimates that advanced countries will experience -5~-10% growth. Almost all countries may not recover in the near future.

On the other hand especially China had jumped up greatly and some other countries, such as India and Indonesia also recorded higher growth, more than 5 %.

Table 1 GDP (real) growth, %

	2007	2009	2010	2015	2018	2019p	2020p
UK, 2015	**2.36**	**-4.85**	**1.70**	**2.40**	**1.30**	**1.50**	**-10.1**
Germany.2010	**3.37**	**-5.57**	**3.95**	**1.50**	**1.30**	**0.60**	**-5.4**
Netherlands, 2010	**3.70**	**-3.77**	**1.33**	**2.00**	**2.40**	**1.70**	
France, 2010	**2.36**	**-2.88**	**1.89**	**1.10**	**1.80**	**1.50**	**-9.5**
Italy. 2010	**1.33**	**-5.53**	**4.65**	**0.80**	**0.80**	**0.30**	**-10.5**
Spain. 2010	**3.77**	**-3.57**	**0.01**	**3.80**	**2.40**	**2.00**	
USA, 2009	**1.78**	**-2.78**	**2.53**	**3.10**	**3.00**	**2.20**	**-7.8**
Japan, 2011	**1.65**	**-5.42**	**4.19**	**1.20**	**0.30**	**0.70**	**-5.8**
Korea, 2010	**5.46**	**0.71**	**6.50**	**2.80**	**2.70**	**2.00**	**-1.0**

Canada, 2007	**2.06**	**-2.95**	**3.08**	**0.70**	**2.00**	**1.70**	**-5.8**
Mexico,2013	**2.28**	**-5.07**	**5.13**	**3.30**	**2.10**	**-0.10**	**-10.2**
China, 2010	**14.23**	**9.40**	**10.64**	**6.90**	**6.60**	**6.10**	**1.8**
Russia, 2016	**8.54**	**-7.82**	**4.50**	**-2.00**	**2.50**	**1.30**	**-7.3**
India, 2011-12	**9.80**	**8.48**	**10.26**	**7.80**	**6.70**	**4.2**	**-10.2**
Indonesia, 2010	**6.35**	**4.70**	**6.38**	**4.90**	**5.20**	**5.00**	**-3.0**

Source: OECD statistics; the world economy 2020.

Chapter 2.-1 Nominal GDP share of the world (Table2)

The Nominal GDP share of the advanced countries was 81.3% in 1995, but in 2018, its share declined to 60.3%.

The most miserable country is **Japan**. Japanese share was in 1995, 17.6%, but in 2018, only 5.6 %, **less than one third.**

Euro Area had lost their share too. Euro area share was in 1995, 24.6%, but in 2018 it declined to 16.1%. Even Germany had lost its share from 8.6% to 4.6% during the same term. Other countries had lost 1~2 %.

The United State of America had not lost so much, 24.6 in 1995 and 24.2% in 2018. But the USA had once over 50% share soon after WWII.

China, on the contrary has gained amazingly, in 1995 Chinese share was only 2.4% and in 2018 jumped up to 15.8%, No. 2 in the world, 10% bigger than Japan. But Japan has maintained the position of No. 3 in the world. Germany is No.4.

(NIES countries, South Korea, Taiwan and Singapore had increased only slightly. From 3.4% to 3.5%.)

ASEAN 5 countries has so far increased from 2.0% to 2.7%. Indonesia jumped from 0.8% to 1.2%, biggest gain in ASEAN. Recently Vietnam is developing rapidly from 0.1% to 0.3%,but Vietnam is still low level.

India is also expanding its GDP share in 1995, 1.2%, to 3.2% in 2018 by rapid increase of manufacturing industry. **Indian government is now making ambitious 5 years program to expand iPhone manufacturing industries. Actually Apple group are shifting their 8 factories from China to India.**

Table 2 World Nominal GDP share. (%)

	1995	**2000**	**2005**	**2010**	**2015**	**2018**
Advanced Nations	**81.3**	**79.1**	**76.2**	**65.5**	**606**	**60.3**
USA	**24.6**	**30.3**	**27.4**	**22.7**	**24.4**	**24.2**
Japan	**17.6**	**14.4**	**10.0**	**8.6**	**5.9**	**5.9**

UK	**4.3**	**4.9**	**5.3**	**3.7**	**3.9**	**3.3**
Germany	**8.6**	**5.8**	**6.0**	**5.2**	**4.5**	**4.7**
France	**5.2**	**4.0**	**4.6**	**4.0**	**3.3**	**3.3**
2.Euro	**24.6**	**19.2**	**22.2**	**19.2**	**15.7**	**16.1**
3.Nies	**3.4**	**3.4**	**3.4**	**3**	**3.4**	**3.5**
Korea	**1.8**	**1.7**	**1.9**	**1.7**	**1.9**	**1.9**
Taiwan	**0.9**	**1.0**	**0.8**	**0.7**	**0.7**	**0.7**
Hong Kong	**0.5**	**0.5**	**0.4**	**0.3**	**0.4**	**0.4**
Singapore	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.4**
China	**2.4**	**3.6**	**4.6**	**9.2**	**15.1**	**15.8**
India	**1.2**	**1.4**	**1.8**	**2.6**	**2.8**	**3.2**
ASEAN5	**2.0**	**1.5**	**1.7**	**2.5**	**2.7**	**2.9**
Indonesia	**0.8**	**0.5**	**0.7**	**1.1**	**1.2**	**1.2**
Thailand	**0.5**	**0.4**	**0.4**	**0.5**	**0.5**	**0.6**
Malaysia	**0.3**	**0.3**	**0.3**	**0.4**	**0.4**	**0.4**
Philippines	**0.3**	**0.2**	**0.2**	**0.3**	**0.4**	**0.4**
Vietnam	**0.1**	**0.1**	**0.1**	**0.2**	**0.3**	**0.3**
Russia	**1.1**	**0.8**	**1.7**	**2.5**	**1.8**	**1.9**
World Total	**100**	**100**	**100**	**100**	**100**	**100**

Ch 2-2 The Nominal GDP per capita (Appendix Table 4).
During 2001 and 2008, in many countries, Per head GDP so far increased. However after 2008, Leman Shock, Par head GDP of advanced countries had not increased, excluding the USA, On the other hand, less developed countries well increased.
The USA increased recently, especially after Trump administration. His major policy was 'America First, or strong America again' and he began to attack China and started decoupling policy.
UK has decided to separate from EU to escape 'free trade' regime.
China, GDP had jumped up from 2,645 in 2007 to 9,608 in 2018, nearly 3.6 times bigger in 11 years.
In **India jumped** from 989 US$ to 2,036 US$ more than double in the same term
In **Indonesia** also nearly double in the same period, from 1,961 US$ to 3,871 US$. **However living conditions of the common people of these countries have not improved so much, because income level is still low..**
(About China)

The economic strategy of China had been to invite and opened the gate for foreign manufacturing companies, such as Japan, USA, Germany, Taiwan and S. Korea. As the result China increased its production capacity and exports.
However Chinese people did not become rich. Recently Chinese prime minister , **Li Keqiang** revealed that more than 600 million people's monthly income is only1,000 Renminbi, nearly equal 140 US$. The majority people of China remain poor. On the other hand high officials of Communist Party became very rich and transferred their money to the USA and Switzerland.

Chapter 3 The result of neo-liberalism and globalization

In the advanced countries, income of common people relatively decreased and consumption of household has been squeezed. That is the cause of long term stagnation, before 'Pandemic disaster'.

Gross Domestic Production (GDP) is explained by following equation.;
Production = Investment + Consumption + Exports – Imports +(-)stock
If imports increase, GDP will decrease. If consumption will decrease, GDP will decrease too. If investment increases, GDP will increase, but if consumption will not change, no capitalist would not invest. Consumption is the key of advanced countries. If they can increase export, investment would be justified.

What is the main cause of stagnation of the advanced countries?
The first factor is low priced imports. The 2nd factor is lower wage for its workers. The majority of people cannot consume much, due to lower income. This is the cause of low GDP growth of the advanced countries. So, the advanced countries had been in stagnation, before Pandemic.

Chapter 4 New movement of capital of advanced countries. After the end of current big recession of the world economy.

4-1)Now is the last stage of 'Neo Liberalism' and 'Globalization'.
Neo Liberalism brought the inequality of people of the advanced countries. Majority of people are getting poorer and miserable. Only a few percent rich people dominate majority of the national wealth.
Since the end of 1970s, neo-liberalism began to dominate world economy.
Thacherism in Britain, and Reganomics in the USA. Neo-liberalism policy had appeared as the solution of stagflation (stagnation and inflation).

The basic policy and philosophy of Neo-liberalism
1) Small government, less tax from rich people. **And privatization was promoted.**
2) Low wage for working people, and less social welfare for common people.
3) Free import from less-developed countries.
4) Pressure to the trade-unions.
5) Avoiding longer term investment, especially manufacturing industries with large investment but promoted development of big finance companies. Monetarism was advocated. The financial capital (major banks) of the USA now dominates world financial economy. **So the money was powered into stock market, 2 or 4 times larger than GDP, which was the cause of 'bubble economy', Leman Shock in 2009 and current situation of 2020.**

4-2) The effect of 'free trade' had been so sever in the advanced countries and began to counter attack.

China has been the biggest beneficiary of the globalization, or free trade and became the No. 2 economy of the world. However, Chinese Government recently became aggressive and got illusion that they can dominate the whole world. "One band one road" policy is the typical manifest of China.
But the conflict with the USA and other advanced countries became apparent and the USA began to counter attack against China. **Trump government now started decoupling policy with China,** and the USA started to establish the alternative source of imports.

In 2019, the total deficit of Balance of payment of the USA was 480.2 billion US$. In 2019, the USA decreased import from China 12.7%. USA trade deficit with China was 419.6 billion$ in 2018 and 344.9 billion$ in 2019.(Annex Table 1 & 2)
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4-3). Structural change of the world economy.

In future, after the end of the Pandemic (Wuhan virus), the world economy will be less globalized than before. Even though, economic recovery may be slow, the economic structure also will be changed. Major banks will lose their power, after burst of bubble.

In the past, almost all the governments of the advanced countries had supported the free trade systems, but now these countries have to establish some barriers to trade and re-establish some portion of manufacturing industries.

Recently president Trump is insisting US companies should relocate factories from China. From semiconductors makers to auto-parts producers, they are recognizing that existing production networks are not stable and risky. Especially concentrating on China is very dangerous, because China intends to control the world economy.

However the USA understands that if all of the factories go back to the USA, they may face difficulty, because the wage level of American workers is still higher and the USA had lost many of its manufacturing factories. So Trump suggests they should 'relocate' to the safer and friendly countries. Now is the chance the global capitalism will be 'rebalanced'.

Less developed countries have good opportunity to introduce more manufacturing industries now. India, Vietnam and possibly Indonesia have started their manufacturing strategy. Indonesia government is arranging good investment environment.

Especially Indonesia will have good opportunity, because Indonesia has plenty of good working force and natural resources. Indonesia has some experience of manufacturing industries, such as cloth making, steel making, automobile assembling and electronics.

4-4). After the end of current big recession of the world economy.
Advanced countries, under the restriction of free trade, the working class will get more jobs and

unemployment ratio will be improved, which means that every advanced country will decrease imports and re-start their manufacturing daily needs products.

In less developed countries manufacturing industries will develops by using FDI(Foreign Direct Investment). But foreign companies with high technology will be more selective to invest in these countries. Foreign companies will request better environment for investment.

The request of foreign companies to the less developed countries.

To the government;
Clean, transparent and efficient administration, which are necessary to improve management cost, in case of **Indonesia**, management cost has been relatively high and time consuming.

To the employees

1) Manufacturing skill is requested to make better quality of products, but these advanced skills will be acquired on the job training (OJT).
2) Skill of communication: English language and the basic skill of computer and internet.
3) Longer time employment: Workers can acquire working knowhow and skill of manufacturing through longer term working experience.

Chapter 5. Merit of manufacturing compared with agriculture

Income is of manufacturing industries usually higher than that of agriculture, owing to the difference of productivity.
According to experience, the difference of productivity between manufacturing and agriculture would be more than three times. In case of Thailand, the difference is 8 times. The development of manufacturing industries would affect the agriculture section, and the income of farmers would be improved following manufacturing development.
But agriculture is very important in Indonesia. Agriculture sector should increase productivity and diversify its products. Village life is also very important for human being. We can live peacefully in village and with large family.

Table 3. Agriculture and Manufacturing in Indonesia

		2000		2010		2015		2018	
Agriculture	Labour(1000)	40,677		41,495		37,750		35,703	
	Output,BilRp	216.8		956.1		1,555.2		1,900.3	
	1000Rp/head	5.330	100	23,041	100	41,197	100	53,225	100
Manufactrng	Labour(1000)	11,642 0		13,824		15,621		18,251	
	Output,BilRp	385.6		1,512.8		2,418.9		2,947.3	
	1000Rp/head	33,121	621	109,433	475	154,849	376	161,487	303

(Source) Key Indicators 2019; ADB

5-1）Economic structure of Indonesia

For these years, the structure of GDP has not changed so much in Indonesia. The agricultural sector has not changed, the industrial sector decreased and the service sector increased. However much of service sector provided 'informal jobs' to workers. Per head production, 'information' is biggest.

Table 4. GDP of Indonesia （% of GDP）

1. GDP(current price) %	2000	2005	2010	2015	2017	2018
Agriculture	15.6	13.1	14.3	13.9	13.7	13.3
Industries	45.9	46.5	43.9	41.3	41	41.4
Services	38.5	40.3	41.8	44.7	45.4	45.2
2.Output by sector (million)	2000	2005	2010	2015	2017	2018
Agriculture	216,800	364,200	956,100	1,555,200	1,787,300	1,900,300
Manufacturing	385,600	760,400	1,512,800	2,418,900	2,739,700	2,947,300
Information	18,300	70,400	256,000	406,000	513,700	559,100
Labor Force (1000)						
Agriculture	40,677	41,310	41,495	37,750	35,925	35,703
Manufacturing	11,642	11,953	13,824	15,538	17,559	18,251
Information				541	819	895

Agriculture(Million Rp/head)	5.330	8.816	23.041	41.197	49.751	53.225
Manufacturing	33.121	63.616	109.433	155.676	156.028	161.487
Information				750.462	627.228	624.693

Many foreign manufacturing companies （US, Japanese, Taiwanese etc.）will move to Indonesia sooner or later, because Indonesia has many good work-force and they can acquire technical skills on the job. As the result, Indonesia can develop manufacturing industries considerably and at least can substitute imports of low technology products from China.

5-2) What Indonesian can do in manufacturing industries?
Assembling industries: clothing, apparel, electronics, PC, iPhone
Auto parts, battery for automobile, electric bicycle, Compact passenger automobiles, EV cars.

Chapter 6． Trade between Indonesia and China.

Indonesia can replace Chinese imports easily.
Indonesia imports manufacturing goods from China, and exports mainly the primary products and natural resources. Manufacturing goods are assembled goods with low technology, which will be easily replaced by Indonesian workers.

In 2019, Indonesia imported from China, 45,790 million US$, and exported to China,34,060 million US$, and trade imbalance with China was 11,729 million US$. The major imported items from China, are ‘machineries and textiles and base metals. (Table 5-1 &2)**.**

Indonesia exports to China mainly natural resources, mineral ore, pulp and palm oil (recently increased steel).
If Indonesia can establish manufacturing industries, Indonesia can export clothing, sports shoes, auto-parts, personal computers and iPhones to the USA and other countries, because the USA wants to change its supply source from China to other countries.

Table 5-1) Indonesian Imports from China (million US$)

		2011	2018	2019	19/18
VI	Chemicals, fertilizers	2,552	4,196	3,849	-8.3
VII	Plastics, rubber	967	1,961	2,168	10.6
XI	**Textile, clothing, silk**	3,292	5,063	5,091	0.6
XIII	Stone, glass, ceramic	465	975	2,047	109.9
XV	**Base metals**	2,805	6,011	5,995	-0.3
72	Iron & Steel	828	2,194	2,049	-6.6
XVI	**Machinery, Electronics**	9,909	16,157	17,543	8.6
84	**Machinery & parts**	5,584	7,974	8,721	9.4
85	**Electrical machinery, parts**	4,325	8,182	8,822	7.8
XVII	Vehicles, aircraft, vessels	1,598	1,867	1,807	-3.2
XVIII	Optical, clocks, musical insr	1,155	1,124	1,208	7.5
	Total	23,555	38,851	41,020	5.6

Table 5-2) Export from Indonesia to China (mil US$)

		2011	2018	2019	19/18	19/11
III	**Animal, vegetable oil**	**3,553**	**3,528**	**3,950**	12.0	11.2
V	**Mineral, ores, oils**	**16,530**	**13,977**	**13,362**	-4.4	-19.2
VI	**Chemicals, fertilizers**	**2,214**	**2,534**	**2,449**	-3.4	10.6
X	**Pulp, paper**	**1,382**	**2,968**	**2,709**	-8.7	96.0
XI	Textile, clothing, silk	478	935	943	0.8	97.3
XII	Foot-ware, umbrellas	120	670	814	21.5	577.1
XV	**Base metals**	**837**	**3,600**	**3,989**	10.8	376.6
72	**Iron & Steel**	**10**	**2,932**	**3,156**	7.6	32,115.2
XVI	Machinery, Electronics	2,239	1,858	1,790	-3.6	20.0
84	Machinery & parts	798	381	475	24.9	-40.5
85	Electrical machinery, parts	1,440	1,477	1,314	-11.0	--8.7
	Total	27,353	30,071	30,005	-0.2	9.7

(Source; China Trade Statistics)

Chapter 7. The problems of Indonesia from the foreign companies' view point. Indonesia has broad room for improvement.

1) Inefficiency of government administration, which is the cause of corruption and high cost of management.

2) Non-tariff barriers. (The special standard of Indonesia, different from foreign standard).
This is what Japanese manufacturing companies are often suffering.

3) Import tax; in case foreign companies for import materials, machines, they must pay their part of income tax beforehand. Tax system is complicated and sometimes the tax will be refunded much later, after hard

negotiation with government officials.)

4) Fair treatment for foreign companies and local companies.

5) Indonesian government should increase 'vocational school', like Thailand. Younger generation needs education of basic manufacturing skill and internet. In Indonesia, 40% of the primary education students will get better jobs. They must be given more education of basic skill , know-how, computer knowledge and English.

The students will support the development of manufacturing and communication. In Thailand these graduates of vocational schools are supporting manufacturing industries such as automobile assembling, auto-parts making and machinery factories.

6) The government has to increase public investment in rural infrastructure and expand the coverage of its agricultural extension program.

Appendix Table

Table1－1 Chinese Trade with Major countries (million $,%)

		2010	2015	2017	2018	2019	18/17	19/18
USA	EXP	283,303	409,538	429,755	479,423	418,674	11.6	-12.7
	IMP	102,038	148,737	153,943	155,096	122,714	0.7	-20.9
	B/L	181,266	260,802	275,812	324,327	295,959	17.6	-8.7
Germany	EXP	68,047	69,161	71,144	77,550	79,774	9.0	2.9
	IMP	74,342	87,623	96,954	106,334	105,108	9.7	-1.2
	B/L	-6,295	-18,462	-25,810	-28,784	-25,335	11.5	-12.0
UK	EXP	38,771	59,582	56,721	56,559	62,406	-0.3	10.3
	IMP	11,304	18,937	22,314	23,879	23,897	7.0	0.1
	B/L	27,467	40,645	34,407	32,679	38,509	-5.0	17.8
France	EXP	27,654	26,753	27,669	30,678	32,992	10.9	7.5
	IMP	17,144	24,657	25,795	32,220	32,581	24.9	1.1
	B/L	10,510	2,096	1,874	-1,542	411		
Netherland	EXP	49,706	59,463	67,135	77,850	73,957	16.0	-5.0
	IMP	6,477	8,792	11,244	12,330	11,206	9.7	-9.1
	B/L	43,228	50,671	55,891	65,521	62,750	17.2	-4.2
Italy	EXP	31,141	27,837	29,171	33,173	33,499	13.7	1.0
	IMP	14,011	16,855	20,427	21,063	21,412	3.1	1.7
	B/L	17,130	10,982	8,744	12,110	12,087	38.5	-0.2

Spain	EXP	18,175	21,860	22,917	24,954	26,876	8.9	7.7
	IMP	6,231	5,600	8,024	8,764	8,603	9.2	-1.8
	B/L	11,943	16,260	14,893	16,190	18,273	8.7	12.9
EU	EXP	311,235	355,876	372,042	408,632	428,700	9.8	4.9
	IMP	168,477	208,879	244,874	273,533	276,596	11.7	1.1
	B/L	142,758	146,997	127,167	135,099	152,105	6.2	12.6
Japan	EXP	121,061	135,671	137,324	147,083	143,270	7.1	-2.6
	IMP	176,707	142,987	165,652	180,580	171,762	9.0	-4.9
	B/L	-55,646	-7,316	-28,328	-33,496	-28,492	18.2	-14.9
S.Korea	EXP	68,771	101,296	102,751	108,789	111,001	5.9	2.0
	IMP	138,399	174,518	177,508	204,639	175,575	15.3	-14.2
	B/L	-69,628	-73,222	-74,757	-95,850	-64,574	28.2	-32.6
Taiwan	EXP	29,676	44,899	43,990	48,647	55,081	10.6	13.2
	IMP	115,644	143,307	155,386	177,598	173,002	14.3	-2.6
	B/L	-85,968	-98,408	-111,396	-128,951	-117,921	15.8	-8.6
India	EXP	40,919	58,240	68,064	76,705	74,827	12.7	-2.4
	IMP	20,841	13,383	16,344	18,838	17,987	15.3	-4.5
	B/L	20,078	44,857	51,720	57,868	56,840	11.9	-1.8
Australia	EXP	27,226	40,322	41,440	47,338	48,205	14.2	1.8
	IMP	60,866	73,643	94,822	105,452	121,432	11.2	15.2
	B/L	-33,640	-33,320	-53,382	-58,113	-73,227	8.9	26.0
Saudi Arabia	EXP	10,367	21,623	18,220	17,444	23,856	-4.3	36.8
	IMP	32,814	30,035	31,764	45,891	54,182	44.5	18.1
	B/L	-22,447	-8,412	-13,544	-28,448	-30,326	110.0	6.6
G/Total	EXP	1,577,824	2,274,950	2,263,522	2,487,401	2,499,029	9.9	0.5
	IMP	1,395,099	1,681,951	1,840,982	2,135,637	2,077,097	16.0	-2.7
	B/L	182,725	592,999	422,540	351,763	421,932	-16.8	19.9

Table 1-2 China Trade with ASEAN10 （million $、%）

		2010	2015	2017	2018	2019	18/17	19/18
Thailand	Export	19,747	38,293	38,706	42,893	45,595	-5.9	6.3
	Import	33,200	37,170	41,580	44,632	46,158	-3.3	3.4

	Balance	-13,453	1,124	-2,874	-1,739	-563	208.7	-67.6
Malaysia	Export	23,806	43,990	41,725	46,403	52,134	-11.0	12.4
	Import	50,410	53,300	54,302	63,222	71,828	-12.0	13.6
	Balance	-26,604	-9,310	-12,578	-16,819	-19,694	-14.6	17.1
Indonesia	Export	21,973	34,342	34,764	43,209	45,644	-5.3	5.6
	Import	20,777	19,888	28,552	36,162	34,061	6.2	-5.8
	Balance	1,195	14,454	6,212	7,048	11,582	-39.1	64.3
Philippine	Export	11,541	26,673	32,044	35,062	40,747	-14.0	16.2
	Import	16,205	18,976	19,231	20,607	20,205	2.0	-1.9
	Balance	-4,665	7,697	12,814	14,455	20,542	-29.6	42.1
Vietnam	Export	23,114	66,124	70,994	83,900	97,870	-14.3	16.7
	Import	6,980	29,842	50,331	63,959	64,134	-0.3	0.3
	Balance	16,133	36,282	20,663	19,941	33,735	-40.9	69.2
Singapore	Export	32,348	52,008	45,020	49,165	54,726	-10.2	11.3
	Import	24,710	27,556	34,223	33,715	35,215	-4.3	4.4
	Balance	7,638	24,452	10,796	15,450	19,511	-20.8	26.3
ASEAN	Export			279,120	319,244	359,425	-11.2	12.6
	Import			235,696	268,628	282,042	-4.8	5.0
	Balance			43,424	50,615	77,383	-34.6	52.9

Source; China Custom Statistics.

Table 2 USA Trade by country (mil $)

		2003	**2010**	**2015**	**2018**	**2019**	**19/18**
World Totl	**Export**	**730,446**	**1,271,972**	**1,489,795**	**1,652,113**	**1,633,066**	-1.2
	Import	**1,272,089**	**1,938,950**	**2,273,249**	**2,561,667**	**2,519,049**	-1.7
	Balance	**-541,643**	**-666,978**	**-783,454**	**-909,554**	**-885,983**	-2.6
Japn	Export	51,805	61,472	63,085	75,958	75,321	-0.8

	Import	119,347	122,929	134,365	144,410	145,534	0.8
	Balance	-67,542	-61,457	-71,280	-68,452	-70,213	2.6
China	Export	28,646	93,059	116,505	120,829	107,719	-10.9
	Import	152,974	366,126	484,071	540,431	452,700	-16.2
	Balance	-124,328	-273,067	-367,566	-419,602	-344,981	-17.8
Hong Kong	Export	13,616	27,531	37,954	38,228	31,648	-17.2
	Import	9,650	4,696	7,318	6,805	5,279	-22.4
	Balance	3,966	22,835	30,636	31,423	26,369	-16.1
China+HK	Export	42,262	120,590	154,459	159,057	139,367	-12.4
	Import	162,624	370,822	491,389	547,236	457,979	-16.3
	Balance	-120,362	-250,232	-336,802	-388,179	-318,612	-17.9
Korea	Export	24,851	40,082	44,483	57,617	57,887	0.5
	Import	37,797	49,762	72,448	75,011	78,089	4.1
	Balance	-12,946	-9,680	-27,965	-17,394	-20,202	16.1
Taiwan	Export	17,847	26,975	26,437	31,168	31,836	2.1
	Import	32,292	36,016	41,011	45,750	54,298	18.7
	Balance	-14,445	-9,041	-14,574	-14,582	-22,462	54.0
Singapore	Export	16,569	29,079	28,280	32,393	31,269	-3.5
	Import	15,434	18,454	18,335	26,414	26,094	-1.2
	Balance	1,135	10,625	9,945	5,979	5,175	-13.4
Indonesia	Export	2,516	6,948	7,118	8,171	7,733	-5.4
	Import	9,515	16,478	19,605	20,829	20,147	-3.3

	Balance	-6,999	-9,530	-12,487	-12,658	-12,414	-1.9
Malaysia	Export	10,914	14,080	12,278	12,952	13,192	1.8
	Import	25,440	25,901	33,972	39,354	40,567	3.1
	Balance	-14,526	-11,821	-21,694	-26,402	-14,526	-45.0
Thailand	Export	5,835	8,976	11,229	12,521	13,299	6.2
	Import	15,179	22,694	28,622	31,863	33,447	5.0
	Balance	-9,343	-13,717	-17,394	-19,342	-20,148	4.2
Philippine	Export	7,987	7,377	7,903	8,716	8,642	-0.8
	Import	10,059	7,892	10,232	12,592	12,778	1.5
	Balance	-2,072	-515	-2,329	-3,875	-4,136	6.7
ASEAN 5	Export	35,870	59,119	58,941	66,072	65,528	-0.8
	Import	75,627	91,419	110,766	131,050	133,033	1.5
	Balance	-39,756	-32,300	-51,825	-64,978	-67,505	3.9
Vietnam	Export	1,324	3,706	7,101	9,676	10,860	12.2
	Import	4,555	14,868	38,015	49,159	66,610	35.5
	Balance	-3,231	-11,162	-30,914	-39,483	-55,749	41.2
India	Export	5,040	19,345	21,515	33,567	34,536	2.9
	Import	13,091	29,683	44,902	54,460	57,762	6.1
	Balance	-8,051	-10,338	-23,387	-20,893	-23,226	11.2
Australia	Export	13,074	21,720	25,179	25,547	26,228	2.7
	Import	6,527	8,815	11,050	10,290	11,018	7.1
	Balance	6,547	12,905	14,129	15,257	15,210	-0.3
Canada	Export	169,992	250,283	281,562	300,158	293,301	-2.3
	Import	224,507	281,822	302,806	325,017	325,761	0.2

	Balance	-54,515	-31,539	-21,244	-24,859	-32,460	30.6
Mexico	Export	97,467	163,757	236,766	265,999	256,860	-3.4
	Import	140,005	232,804	303,369	352,583	364,461	3.4
	Balance	-42,538	-69,047	-66,603	-86,584	-107,601	24.3
Brazil	Export	11,224	35,348	31,565	39,461	42,716	8.2
	Import	17,989	24,200	26,470	30,152	30,806	2.2
	Balance	-6,765	11,148	5,095	9,309	11,910	27.9
Saudi Arabia	Export	4,764	11,462	19,852	13,601	14,349	5.5
	Import	18,156	31,485	22,151	24,124	13,451	-44.2
	Balance	-13,392	-20,023	-2,299	-10,523	898	
France	Export	17,257	27,353	30,235	36,749	37,883	3.1
	Import	29,415	38,817	48,415	52,834	57,903	9.6
	Balance	-12,158	-11,464	-18,180	-16,085	-20,020	24.5
Germany	Export	29,018	48,482	50,069	57,779	60,064	4.0
	Import	68,713	83,505	125,462	125,206	127,804	2.1
	Balance	-39,695	-35,023	-75,393	-67,427	-67,740	0.5
Italy	Export	10,569	14,393	16,288	22,925	23,882	4.2
	Import	25,526	28,797	42,752	54,951	57,496	4.6
	Balance	-14,957	-14,404	-26,464	-32,026	-33,614	5.0
Euro	Export	21,014	26,090	29,220	34,852	38,123	9.4
	Import	43,609	58,542	79,643	109,531	113,245	3.4
	Balance	-22,595	-32,452	-50,423	-74,679	-75,122	0.6

UK	Export	33,979	49,080	55,519	69,664	69,078	-0.8
	Import	43,345	52553	58,656	61,461	63,795	3.8
	Balance	-9,366	-3,473	-3,137	8,203	5,283	
Russia	Export	2,447	5,994	7,087	6,658	5,785	-13.1
	Import	8,818	25,691	16,372	20,858	22,260	6.7
	Balance	-6,371	-19,697	-9,286	-14,200	-16,475	16.0

Source: USA, Census

Table 3 Balance of Payment (billion US$)

	2012	2013	2014	2015	2016	2017	2018	2019
USA		-336.9	-367.8	-407.4	-394.9	-365.3	-449.7	-480.2
UK		-132.9	-144.6	-143.6	-141.8	-93.0	-110.2	-113.3
Germany	251.6	245.4	278.7	288.6	295.1	287.2	293.2	
Japan	60.1	46.4	36.4	136.5	197.0	203.2	176.1	
China	215.4	148.2	236.0	304.2	202.2	195.1	25.5	
Singapore	52.1	48.3	56.5	57.6	56.2	55.6	64.1	
Thailand	-4.9	-8.8	11.6	27.8	43.4	44.0	28.5	

Source: IMF

Table 4 Nominal GDP per Capita (US$)

	2001	**2008**	**2009**	**2015**	**2017**	**2018**
UK,	**24278**	**43,283**	**35,169**	**44,328**	**39,735**	**42,558**
Germany	**22965**	**44,259**	**40,672**	**41,345**	**44,550**	**48,264**
France	**21920**	**44,149**	**40,693**	**37,866**	**39,869**	**42,878**
USA	**35309**	**46,901**	**45,674**	**56,770**	**59,895**	**62,606**
Japan	**32215**	**38,216**	**39,471**	**34,589**	**38,344**	**39,306**
Taiwan	**13061**	**17,399**	**16,353**	**22,374**	**24,390**	**24,971**
Korea	**10176**	**19,162**	**17,110**	**27,105**	**29,750**	**31,346**
China	**928**	**3,404**	**3,739**	**8,167**	**8,677**	**9,608**
Russia,	**2100**	**11,701**	**8,614**	**9,478**	**10,962**	**11,327**

India,	**466**	**1,065**	**1,058**	**1,640**	**2,014**	**2,036**
Indonesia,	**775**	**2,237**	**2,327**	**3,368**	**3,885**	**3,871**
Thailand	**1863**	**4,300**	**4,151**	**5,968**	**6,731**	**7,187**
Malaysia	**3746**	**8071**	**6917**	**9,512**	**9,828**	**10,942**
Philippines	**922**	**1,842**	**1,748**	**2,883**	**2,989**	**3,104**

Source; OECD statistics

Table 5 Unemployment ratio of advanced countries.(%)

	2018	2006	2009	2015	2016	2017	2018	2019
France	2682.5	8.8	9.1	10.3	10	9.4	9	8.4
Germany	1468.3	10	7.6	4.6	4.2	3.8	3.4	3.2
Netherlands	350.1	5	4.4	6.9	6	4.9	3.8	3.4
Italy	2761.2	6.8	7.7	11.9	11.7	11.3	10.6	9.9
Spain	3479.1	8.5	17.9	22.1	19.6	17.2	15.3	14.1
Euro area 17	13340.9	8.3	9.6	10.8	10	9.1	8.2	7.6
UK	1380	5.4	7.6	5.4	4.9	4.4	4.1	3.8
United States	6308.2	4.6	9.3	5.3	4.9	4.4	3.9	3.7
Japan	1666.7	4.1	5	3.4	3.1	2.8	2.4	2.4
Korea	1075.5	3.5	3.6	3.6	3.7	3.7	3.9	3.8
Mexico [1]	1833.7	3.6	5.4	4.3	3.9	3.4	3.3	3.5
Total OECD	36193	6.3	8.3	6.9	6.4	5.9	5.5	5.4

Source: OECD Statistics.

1.5 INNOVATION OF EDUCATIONAL TECHNOLOGY

Dr. Arman Shah bin Abdullah
Universiti Pendidikan Sultan Idris Malaysia

CURRICULUM VITAE

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Publication in Scopus databased
H Index:6
Total Citation :94
Total article:50

Publication in Web Of Science
H Index:4
Total Citation :51
Total article:23

Academic Background

Ph.D (Universiti Teknologi Malaysia, Malaysia) Major : Mechanical Engineering
Year awarded : 2015

M.Eng. (Universiti Teknologi Malaysia, Malaysia)
Major : Mechanical-Advanced Manufacturing Technology
Year awarded : 2010

B.Eng. (Universiti Teknikal Malaysia Melaka (UTeM), Malaysia) Major : Mechanical-Manufacturing Design)
Year awarded : 2009

Current Position

Deputy Director, Data and Strategic Planning, Research Management And Innovation Centre, Universiti Pendidikan Sultan Idris, 16 JULY 2020 to Present.

Associate Profesor : Faculty of Technical and Vocational, Universiti Pendidikan Sultan Idris.
Duration : 01 February 2020 – present

IMPROVEMENT OF CORROSION RESISTANCE OF TiN COATED ON TITANIUM ALLOY FOR BIOMEDICAL APPLICATION

ASSOC. PROF. Ts. DR. ARMAN SHAH BIN ABDULLAH
Faculty of Technical and Vocational
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DR MOSTAFA REZAZADEH SHIRDAR
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PROF. DR IZMAN BIN SUDIN
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Universiti Teknologi Malaysia

PROF. DATO DR. MOHAMMED RAFIQ BIN DATO ABDUL KADIR
Faculty Of Engineering
Universiti Teknologi Malaysia

Titanium Alloys

Titanium and its alloys are commonly used in biomedical applications as an implant for hip, knee, and shoulder replacements

Advantages of Titanium are biocompatibility, a low corrosion rate, low modulus, and a high strength to weight ratio

What are the Issues?

Corrosion Due to present of Cl- ion in body fluids

Surface Modification are possible solution

Advantages of PVD:
Low processing temperature

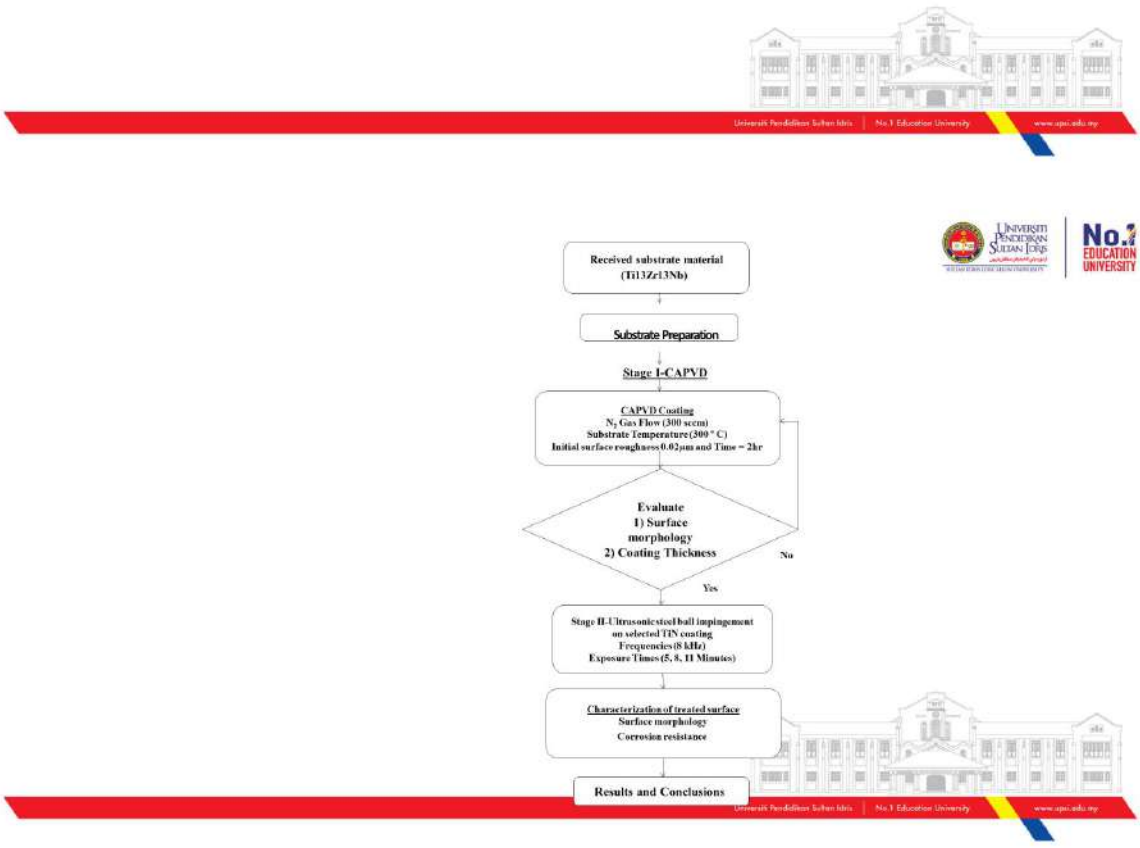
Current states of the art

Highly Investigated potential surface modification for improving implant material

Limitation
- **Defect such as pore,**
- **pin hole**
- **columnar structure**

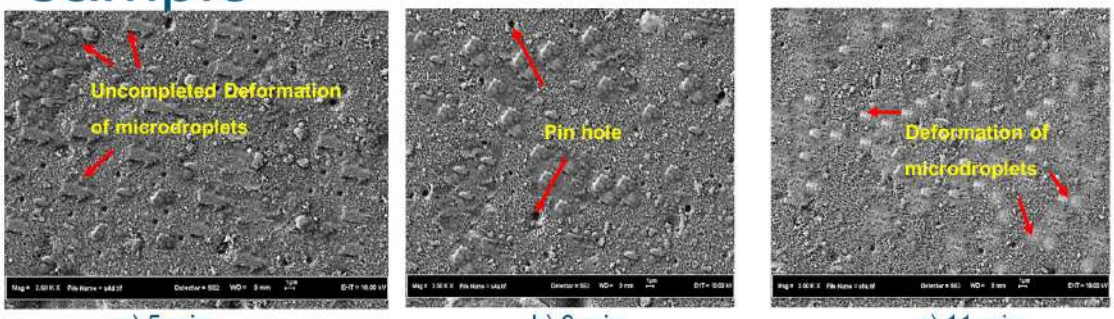
Required simple method to improve corrosion resistance on Titanium alloys

RESEARCH METHODOLOGY



Results and Discussion

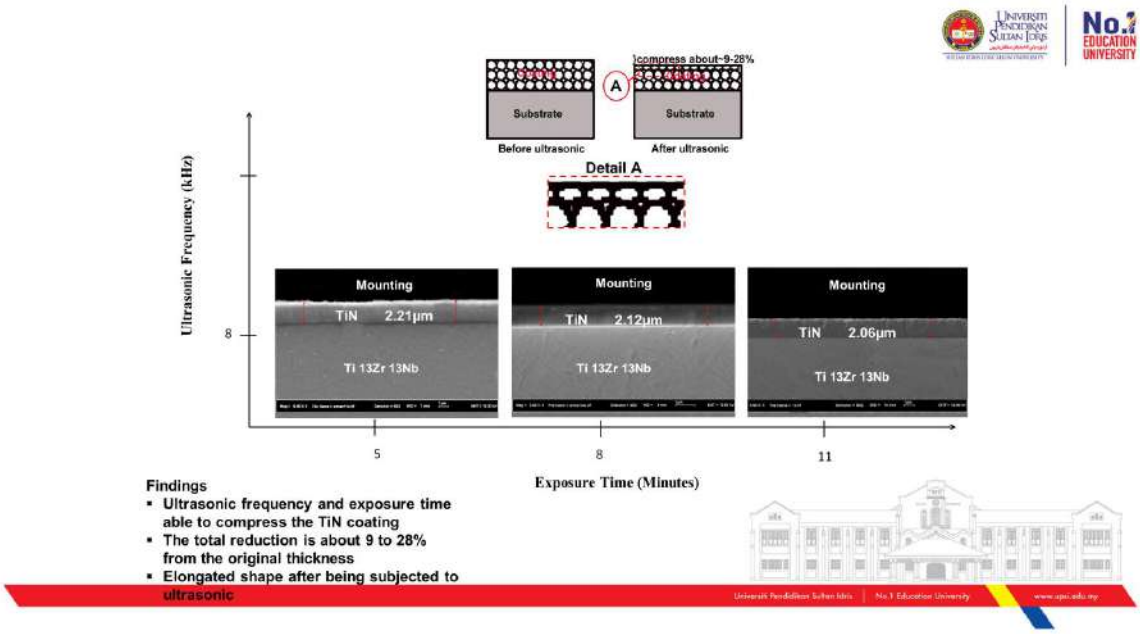
Microstructure of Coated sample



a) 5 min b) 8 min c) 11 min

Findings

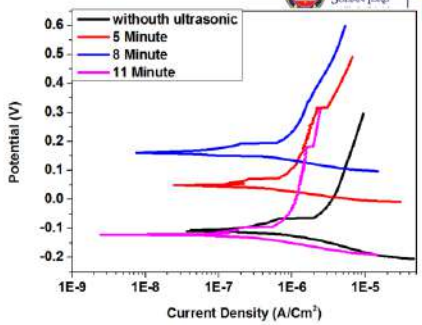
Mechanical treatment able to compress the microdroplet and cover the pin hole at the coated surface



Findings

- Ultrasonic frequency and exposure time able to compress the TiN coating
- The total reduction is about 9 to 28% from the original thickness
- Elongated shape after being subjected to ultrasonic

Effect of mechanical treatment on corrosion behaviour of Ti-13Zr-13Nb



Samples	E_{corr} (mv)	I_{corr} (µA/cm²)	Corrosion Rate (mm/Year)	R_{ct}	C_{dl}
Without Ultrasonic	-110.11	0.971	18.6323E-3	1883	2.7E-5
5 min, 8KHz	49.07	0.261	4.9241E-3	2816	1.73E-5
8 min, 8KHz	38.64	0.1950	3.9185E-3	3507	9.96E-6
11 min, 8KHz	-59.19	0.1363	2.7554E-3	4510	7.11E-6

Findings

Mechanical treatment improve the compactness of coated sample thus increase the corrosion resistance

Exposure of coated sample at longer time of mechanical treatment improve the surface coating

Conclusions

- **Higher vibration frequency at pro-long exposure time exhibits low current density on the treated coated substrate.**
- **It is believed that higher vibration frequency at long exposure time able to reduce more pores and voids in TiN coating which finally increases resistance for charge transfer Rct.**
- **Improvement of corrosion resistance is also indicated in reduction of Icorr value in treated coated substrates against untreated sample.**

Thanks

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1.6 TECHNOLOGY DEVELOPMENT TO INCREASE CROP PRODUCTION

Dr. Paiman
Universitas PGRI Yogyakarta
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CURICULUM VITAE (CV)

PERSONAL DETAILS

Place and Date of Birth	Sragen, September 16, 1965
Sex and Marital Status	Male – Married
Home Address	Babadan Baru, RT. 13, Banguntapan, Bantul, DIY, Indonesia
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Mobile Phone	+6281328629000
Office Phone and Fax	+6274 376808

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2014	Doctor of Agronomy, Faculty of Agriculture, Universitas Gadjah Mada (UGM), Yogyakarta, Indonesia
1994	Master of Agronomy, Faculty of Agriculture, Universitas Gadjah Mada (UGM), Yogyakarta, Indonesia
1991	Bachelor of Agronomy, Faculty of Agriculture, Institut Pertanian "STIPER" (INSTIPER), Yogyakarta, Indonesia

WORK EXPERIENCE AND CAREER HISTORY

2017-2021	Rector of Universitas PGRI Yogyakarta (UPY)
2013-2017	Secretary of Yayasan Pembina Universitas PGRI Yogyakarta (YP-UPY)
2013-2017	Vice Dean of Faculty of Agriculture, Universitas PGRI Yogyakarta
2009-2013	Vice Dean of Faculty of Agriculture, Universitas PGRI Yogyakarta
2005-2009	Dean of Faculty of Agriculture, Universitas PGRI Yogyakarta
2001-2005	Vice Dean of Faculty of Agriculture, Universitas PGRI Yogyakarta
1997-2001	Head of Department of Agrotechnology, Universitas PGRI Yogyakarta

PROFESSIONAL ORGANIZATION

2017-2021	Head of Assosiation "Ahli dan Dosen Republik Indonesia Daerah Istimewa Yogyakarta (ADRI-DIY)"
2016-Now	Member of "Perhimpunan Anggrek Indonesia Daerah Istimewa Yogyakarta (PAI-DIY)"
2016-Now	Member of "Persatuan Guru Republik Indonesia (PGRI)"

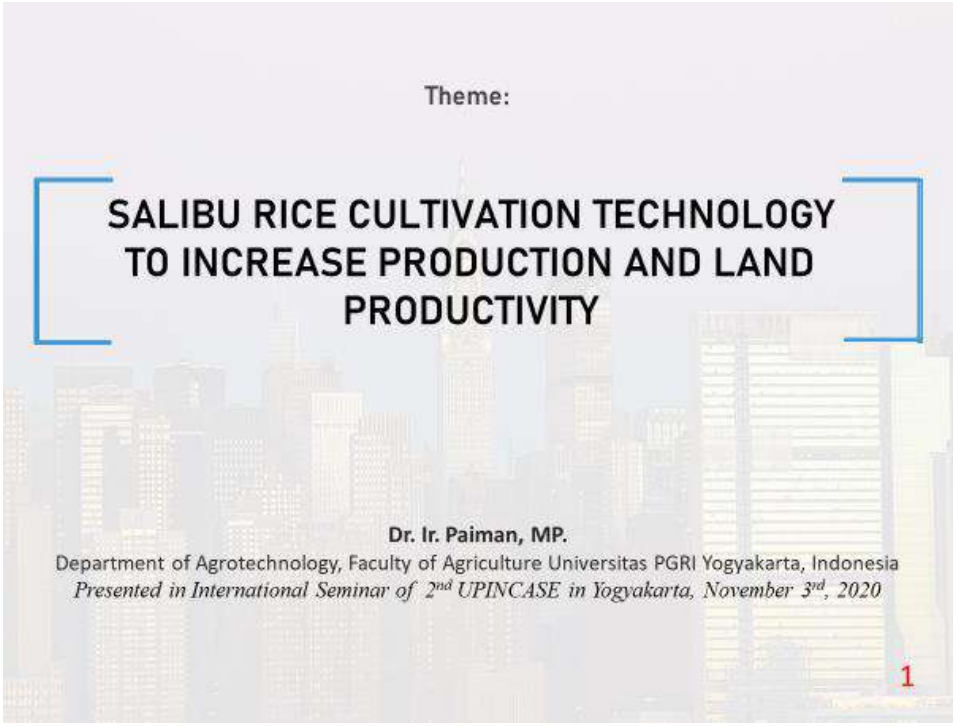
FIELD OF SPECIALIZATION

Agrotechnology

RESEARCH INTEREST

Weed control, horticulture, and food crop

Dr. Paiman (Universitas PGRI Yogyakarta, Indonesia)



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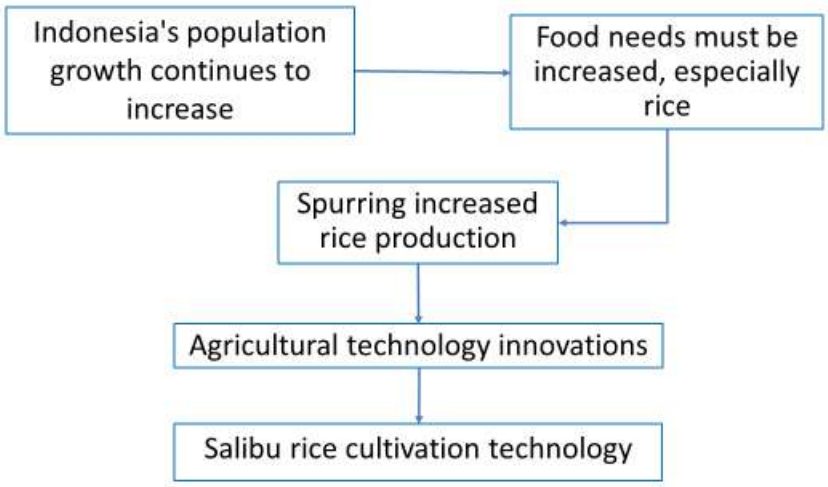
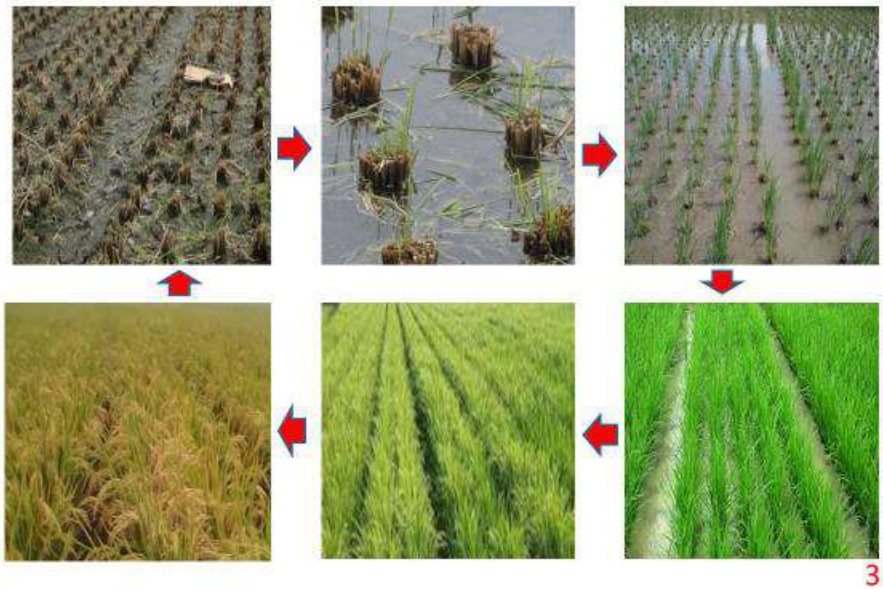


2

Stages of Salibu Rice Technology



3

Salibu and *Tapin* rice Cultivation

No.	Parameter	Salibu	Tapin
1	Previous harvest	Ten days early	Normal
2	Land preparation	Cutting off the stems of the harvest (seven days after harvest)	Harvest waste hay cleaning
3	Soil tillage	None	Piracy 2x
4	Nursery	None	There are
5	Planting	None	There are
6	Fertilizer	Recommendation and increase N	Recommendation
7	Looting/insertion	20-25 days	25-30 days
8	Weed control	Early and planting hay stem pieces	Standard of plant disruptor organism
9	Maintenance	Standard of plant disruptor organism	Standard of plant disruptor organism
10	Harvest age	Earlier 20% of the average lifespan	Normal

4

Description of Superior variety

Inpari with short lifespan rice (harvest age ≤ 105 days after spread)

No.	Superior variety	Harvest age (days after planting)	Average of results (tons/ha)	Potential of results (tons/ha)	Year released
1.	Inpari 11	105	6,5	8,8	2010
2.	Inpari 12	99	6,2	8,0	2010
3.	Inpari 13	99	6,6	8,0	2010
4.	Inpari 18	102	6,7	9,5	2011
5.	Inpari 19	104	6,7	9,5	2011
6.	Inpari 20	104	6,4	8,8	2011
7.	Inpari Sidenuk	103	6,9	9,1	2011
8.	Inpari 34 Salin Agitan	102	5,1	8,1	2014

5

The accuracy of cutting the stem

The treatment of height and timing of cutting off stems of the parent plant gives the highest rice production

No.	Height of cutting off the stems (cm)	Time of cutting off the stems (days)	Reference source
1	3-5	7-8	(Fitri et al., 2019)
2	2-5	7	(Suparwoto & Waluyo, 2015)
3	3-5	8-10	(Erdiman et al., n.d.)
4	3	-	(Nuzul et al., 2018)

6

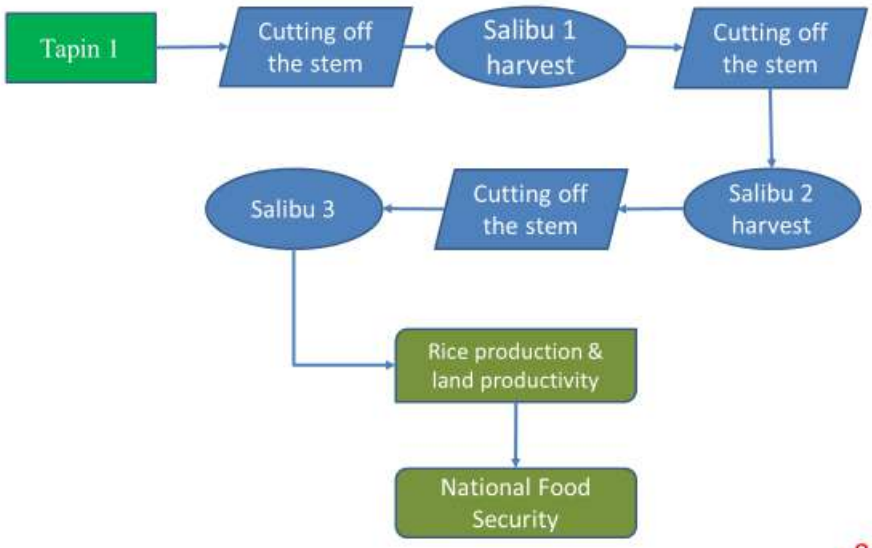
Balanced Fertilization

The difference of optimum doses in Salibu and Tapin

No.	Salibu (kg/ha)	Tapin (kg/ha)	Reference source
1	-	ZA-NPK= 333 & 300	(Kurniadie, 2002)
2	-	N-NPK = 100 & 300	(Siska and Ismon, 2019)
3	-	Urea-NPK = 225 & 225	(BPPP, 2014)
4	Urea-NPK = 150 & 150	-	(Suparwoto and Waluyo, 2015)
5	Urea-NPK = 150 & 150	-	(Erdiman et al., n.d.)

7

Salibu Rice in Full Land Irrigation



8

Planting Pattern of Salibu and Tapin

No.	Irrigation system	Salibu	Tapin
1	Rainy land	Tapin1-Salibu1	Tapin1
2	Semi-technical irrigation	Tapin1-Salibu1-Salibu2	Tapin1-Tapin1
3	Full land irrigation	Tapin1-Salibu1-Salibu2-Salibu3	Tapin1-Tapin2-Tapin3

Higher rice production and land productivity

9

Conclusions

Based on the discuss in above, it can be concluded that national food security in Indonesia could be application by *Salibu* rice cultivation technology.

- The use of superior varieties and short lifespan, the timing and height of cutting off stems at remaining harvest, and balanced inorganic fertilizers can increase *Salibu* rice production and land productivity.
- *Salibu* rice cultivation technology could be increase production and land productivity at the time of one year.
- In future, it can increase the food security in Indonesia

10

CONFERENCE RUNDOWN

(Tuesday – Wednesday, 3 – 4 November 2020)

Time and Duration (WIB)	Activities	PIC
DAY 1 (Tuesday, 3 November 2020)		
07.00 – 08.00	Preparation and Attendance Registration	Committee
08.00 – 08.30	Opening session	Master of Ceremony
08.30 – 08.45	Greeting from Chair of Committee	Chair of Committee
08.45 – 09.00	Greeting from Rector of Universitas PGRI Yogyakarta	Rector
09.00 – 10.00	Speech from Keynote Speaker 1: *Science and Technology for Future Education*	Prof. Tai-Chien Kao (National Dong Hwa University, Taiwan)
10.00 – 11.00	Speech from Keynote Speaker 2: *Social Transformation in Society 5.0*	Prof. Wasino (Universitas Negeri Semarang, Indonesia)
11.00 – 12.00	Speech from Keynote Speaker 3: *Information and Technology for Sustainable Development*	Dr. David Nwanna Dumbiri (University of Benin, Nigeria)
12.00 – 13.00	Preparation for Parallel Session	Committee
13.00 – 16.00	Parallel Session (Author presentation Session Day-1)	Committee
DAY 2 (Wednesday, 4 November 2020)		
08.00 – 08.30	Preparation and Attendance Registration	Committee
08.30 – 09.00	Opening session	Master of Ceremony
09.00 – 10.00	Speech from Keynote Speaker 4: *Business and Services Transformation in Society 5.0*	Prof. Suzuki Takashi (Kyoto University, Japan)
10.00 – 11.00	Speech from Keynote Speaker 5: *Innovation of Educational Technology*	Dr. Arman Shah bin Abdullah (Universiti Pendidikan Sultan Idris, Malaysia)
11.00 – 12.00	Speech from Keynote Speaker 6: *Technology Development to Increase Crop Production*	Dr. Paiman (Universitas PGRI Yogyakarta, Indonesia)
12.00 – 13.00	Preparation for Parallel Session	Committee
13.00 – 16.00	Parallel Session (Author presentation Session Day-2)	Committee

PARALLEL SESSION SCHEDULE

PARALLEL SESSION
DAY 1 (TUESDAY, 3 NOVEMBER 2020)

ROOM 1

Moderator: Kintoko, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	096	D Agustiani, S Wardani, A Riyadi	OpenCV and Machine Learning Implementation for the Vehicles Classification and Calculation in the Parking Tax Monitoring System at the Bantul Regency Regional Financial and Asset Agency (BKAD)
2	13.30 – 13.45	108	Sekar Dwi Ardianti, Savitri Wanabuliandari	Ethno-Edutainment Digital Module To Increase Students' Concept Understanding
3	13.45 – 14.00	003	Eko Wahyunanto Prihono, Fitria Lapele, Siti Nurjanah	Content Validity of Multicultural Learning System Instruments at IAIN Ambon, Maluku
4	14.00 – 14.15	029	Abdul Aziz Saefudin, Koryna Aviory, Gunawan	Improving Students' Mathematical Self-Regulated Learning with Modified Moore Method
5	14.15 – 14.30	101	Kaswi, Suad, Gunawan Setiadi	Utilization of Information Technology in Improving Teacher's Performance
6	14.30 – 14.45	051	Muhammad Sholeh, Irmah Gisfas, Cahiman, Muhammad Anwar Fauzi	Black Box Testing on ukmbantul.com Page with Boundary Value Analysis and Equivalence Partitioning Methods
7	14.45 – 15.00	016	Amalia C. Nur'aidha, Dhananjaya Y.H Kumarajati	Experimental Study of Electrode Design and Configuration for Bioimpedance Measurement
8	15.00 – 15.15	146	Budi Sayekti, Murtono, A. Hilal Madjdi	Design of Invention-Based Student Activity Sheets Technology toImprove Learning Outcomes of Cube and Block Volume
9	15.15 – 15.30	153	Maulana Majid, Mohammad Kanzunnudin, Irfai Fathurohman	Study Of The Narrative Structure Of Loram Kudus People As A Means Of Learning Literary Appreciation: Content Analysis Based On Vladimir Propp

ROOM 2

Moderator: Andi Dian Rahmawan, M.A

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	074	Didik Rohmantoro, Bayu Gilang Purnomo, Muhamad Amiruddin, Sena Mahendra	Analysis Of The Effect Of A Catalyst Hydrocarbon Crack System Spiral Pipe Against The 4-Stroke Motorcycle Engine Power
2	13.30 – 13.45	119	S. Hartik, Sri Utaminingsih, Ahmad Hilal Madjdi	A Need Assesment of Integrated Science Teaching Material Based Higher Order Thinking Skills (HOTS)
3	13.45 – 14.00	053	E Sutanta, RA Kumalasanti, EK Nurnawati, C Iswahyudi, T A Putra	RDBMS and Google Maps Integration Model for WebGIS Based Land Ownerships Data Visualization
4	14.00 – 14.15	085	Bayu Ananto Wibowo, Darsono	Community Based Tourism Model As An Effort To Develop Gilangharjo Village Into A Tourism Village
5	14.15 – 14.30	130	Kodhori, Su'ad, A. Hilal Madjdi	Work Motivation in Efforts to Improving Perspective of The Head of Schools in Kudus
6	14.30 – 14.45	026	Andi Dian Rahmawan, Eko Perianto	Identifying Problems on Fostering HOTS: Bridging the English Teaching and the Development Of Critical Thinking
7	14.45 – 15.00	109	Deni Nasir Ahmad, Abdul Karim, Ihwan Zulkarnain, Aster PujaningvAti, Diah Oga Nusantari	Analysis Creative Thinking Ability and Scientific Communication in HOTS Learning Using Whatsapp Media
8	15.00 – 15.15	082	Tri Hastono, Firdiyan Syah	Pl/Sql Design To Determine The Input Pattern Automatically In The Application To Predict The Number Of Customer Durian Fruit Needs
9	15.15 – 15.30	155	Sumarwiyah, Edris Zamroni, Masturi	Experiential learning with local wisdom: Prelimenary Study for Improving Analytical Thinking Ability

ROOM 3

Moderator: Ekha Rifki Fauzi, M.T.

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	032	Ganung Anggraeni, Budiharti	Recreational Mathematics Activities to Enhance Students' Mathematics Achievement and Learning Motivation
2	13.30 – 13.45	132	Sunoto, Su'ad, Erik Aditia Ismaya	Social Science Learning In Covid 19 Pandemic By Using Internet Media
3	13.45 – 14.00	095	Bayu Gilang Purnomo, Didik Rohmantoro, Yulia Venti Yoanita, Muhammad Priya Permana, Muhamad Amiruddin	Awareness Implementation Of The Prevention Of Health Protection Of Covid-19
4	14.00 – 14.15	150	Vebriani, Niasari, Slamet Utomo, Suad	The use of technology in learning can improve discipline
5	14.15 – 14.30	068	Sunarti, Reni Bella Fitriana Dewi	The Development of Drawing Storybook Learning Media to Improve Reading Interest of Class Iii Students in Primary School
6	14.30 – 14.45	139	Dewi Widyaningrum, Sri Utaminingsih, Santoso	HOTS - based scientific learning to increase the comprehension concept and science students skill
7	14.45 – 15.00	001	Syahria Anggita Sakti, Rian Nurizka, Luqman Hidayat	The Prevention of Bullying in Early Childhood through The Javanese Culture of "Pitutur Luhur"
8	15.00 – 15.15	061	Abdul Rahim	Effect of Project Based Learning Model Application Against Student Achievement
9	15.15 – 15.30	156	Rihayati, Sri Utaminingsih, Santoso	Improving Critical Thinking Ability Through Discovery Learning Model Based on Patiayam Site Ethnoscience

ROOM 4

Moderator: Dr. Septian Aji Permana, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	079	R. Hafid Hardyanto, Prahenusa Wahyu Ciptadi, Nurdin Mukhayat	Internet of Things Design on Chili Plants
2	13.30 – 13.45	115	Suripah, Sukirman, Sri Surachmi W	The Correlations Between Academic Supervision Using Zoom Meeting Technology with Teacher Job Satisfactio
3	13.45 – 14.00	031	Eka Widyaningsih, Radiaswari, Adinda Rafika Dani	Spatial Utilization for Public Activities On The Boundary of Railway line at Mejing and Sedayu, Special of Yogyakarta
4	14.00 – 14.15	120	Nur Imama, Sri Utaminingsih, A. Hilal Madjdi,	The Effectiveness of the Development of Problem Based Learning Model Based on Bakiak Game Technology in Mathematics Learning in Elementary Schools
5	14.15 – 14.30	069	Danuri, Vita Dewi Prastiwi Jati, Padrul Jana	Problem-Based Learning vs Student Teams Achievement Divisions Assessed from Student's Mathematics Problem Solving Ability
6	14.30 – 14.45	118	Dhina Widiati, Murtono, Su'ad, SekarDwi Ardianti	Technology of Learning Media for Dyslexia Children's
7	14.45 – 15.00	010	Ari Kusuma Wardana, Rianto	The Best Selection of PIP Scholarship: AHP-TOPSIS Vs Fuzzy AHP-TOPSIS
8	15.00 – 15.15	014	Adhi Prakosa, Ahsan Sumantika	An Analysis of Online Shoppers' Acceptance and Trust toward Electronic Marketplace Using TAM Model
9	15.15 – 15.30	158	Dewi Widarwati, Sri Utaminingsih, Murtono	STEAM (Science Technology Egineering Art Mathematic) Based Module for Building Student Soft Skill

ROOM 5

Moderator: Bintang Wicaksono, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	046	Ekha Rifki Fauzi	Social Engineering Of Hazard Control In Medical Waste Management Workers
2	13.30 – 13.45	141	Taufiqur Rohman, Sri Surachmi, Murtono	The Influence of Think Pair Share Model and Crossword Puzzle to increase Primary School Students' Mathematical Learning Interest
3	13.45 – 14.00	034	Dekeng Setyo Budiarto, Suci Wahyu Ningrum, Yennisa, Ratna Purnama Sari, Rani Eka Diansari	The performance of information systems: Emprical research on Government Organization
4	14.00 – 14.15	013	Vidya Vitta Adhivinna, Kiki Safitri, Sri Widodo, Hari Purnama, Ratna Purnama Sari	The Important Of Governmental Financial System Towards Information's Quality Of Financial Statement (A Case Study From Purbalingga's Sub-District)
5	14.15 – 14.30	077	Arip Febrianto, Nurirwan Saputra	Effectiveness of the Media learning Islamic Education-based Sparkol Videoscribe
6	14.30 – 14.45	123	Edris Zamroni, Addahri Hafidz Awlawi, M. Nurzin R Kasau, Kholik, Usman M	Effect of Achievement Motivation and Emotional Intelligence on Self-Regulation and its impact on Student Academic Resilience in the Covid-19 Pandemic era
7	14.45 – 15.00	131	Nur Imama, Sri Utaminingsih, A. Hilal Madjdi	The Effectiveness of the Development of Problem Based Learning Model Based on Bakiak Game Technology in Mathematics Learning in Elementary Schools
8	15.00 – 15.15	035	Faiz Noormiyanto, Dwi Setianingsih, Ramdhan Harjana, Dwi Putri Fatmawati, Yulian Agus Suminar, Luqman Hidayat	Development Of Scaffolding Based Demonstration Method To Improve Language Abilities Students Of PGRI University, Yogyakarta
9	15.15 – 15.30	160	Dewi Fatimah, Murtono, Su'ad	Katela Media Technology for multiplication count operations

ROOM 6

Moderator: Rianto, M.Kom

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	073	E P E Syafril, W Kurniawati	PPT-Audio; The Alternative Audio-Visual Learning during the Corona Pandemic
2	13.30 – 13.45	151	Tigas Tri Kurniawan, Santoso, Sri Utaminingsih	Analysis of 4C-Based HOTS Assessment Module on Critical Thinking Ability
3	13.45 – 14.00	081	Deri Anggraini, Bahtiyar Heru Susanto	The Role of Parents in Fostering a Culture of Family Literacy
4	14.00 – 14.15	114	Nur Laila Afifah, Murtono, Santoso, Sekar Dwi Ardianti	Development of Pocket Book Based on Science Literacy
5	14.15 – 14.30	011	Ari Retno Purwanti, Lilik Siswanta	The Appropriate Technology In Cultivating Mushrooms By Street Children In Hafara
6	14.30 – 14.45	107	Ahmad Syukri Endiawan, Irfai Fathurohman, Santoso	Development Design Technology Comic Literacy Android Based E-book
7	14.45 – 15.00	094	Aditya Wahana, Hasti Hasanati Marfuah	The Use of Augmented Reality to Build Occupational Health and Safety (OHS) Learning Media
8	15.00 – 15.15	112	Zaenal Arifin, Sri Utaminingsih, Gunawan Setiadi	Thematic Module Design Based on Local Wisdom for Class V Elementary School Students
9	15.15 – 15.30	162	Kintoko, Kristina Warniasih, S.B.Waluyo, YL Sukistiyano	Developing Socioculture-based Reflective Picture Storybook Media for Math Lesson

ROOM 7

Moderator: Theofilus Bayu, M.Sc

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	036	Esti Setiawati, Ika Ernawati, Salamah	Evaluation Of Character Education Strengthening Programs In Culture-Based Schools
2	13.30 – 13.45	133	Wahyu Kurniawan, Su'ad, dan Sukirman	Determinant Factors of Extraordinary Elementary School Teacher Professionalism
3	13.45 – 14.00	072	Dewi Amrih, Adi Sutakwa	An alternative to a butterfly pea flowers and spices dip as a creative endeavour in the village of Bawuran
4	14.00 – 14.15	143	Prihadi,Murtono, Gunawan Setiadi	Effectiveness of Blended Learning to Improve Critical Thinking Skills and Student Science Learning Outcomes
5	14.15 – 14.30	047	Astri Praba Shinta, Brevi Istu Pambudi	Effect Of E Booklet Media About Obesity Prevention On Knowledge Levels In Junior High School Students In Yogyakarta
6	14.30 – 14.45	152	Himmatul Ulya, Ratri Rahayu	Students' Mathematical Representation Ability In Kudus Local Wisdom-Based Open-Ended Learning
7	14.45 – 15.00	065	Septian Aji Permana, Ari Retno Purwanti, Supri Hartanto	Media Information Technology Games Based On Local Cultural Content
8	15.00 – 15.15	117	Ary Kustiyani , Sri Surachmi W, Suad	Implementation Problem Based Learning Model Using Zoom Meeting Aplication
9	15.15 – 15.30	098	Yulia Venti Yoanita, Sinung Tirtha Pinindriya, Eli Kumolosari	The Influence of Gurney Flap to the Stability of Formula Car Rear Wing with Simulation
10	15.30 – 16.00	164	Tarto, Indriansyah	The Contribution Of Learning Interest, Activeness, And Discipline To Smp Students' Social Studies Learning Achievement Of Kasihan Sub-District, Bantul In 2019

ROOM 8

Moderator: Juang Kurniawan, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	007	D Gularso, HA Rigianti, H Suryantari	Parents' Difficulties in Learning Assistance during COVID-19 Era
2	13.30 – 13.45	059	Oktaviani Adhi Suciptaningsih, Titik Haryati	Pitutur Ki Hajar Dewantara as Character Education Media Based Javanese Ethnopedagogy
3	13.45 – 14.00	135	Wiwik Subekti, Suad, Gunawan Setiadi	The Effect of Principals Managerial Ability and Work Motivation on Teacher Performance
4	14.00 – 14.15	055	Atika Nur Syarifah, Dewi Amrih	The study of addition variety of vegetable flour on physical characteristics of tortilla chips
5	14.15 – 14.30	015	Nurul Fatimah, Elly Kismini, Asma Luthfi, Rara Sita Oktariana	Rethinking of Learning Media Through Optimizing the Use of Social Media (Instagram) in Learning Activities in Schools
6	14.30 – 14.45	127	Roikatus Sa'diyah, Su'ad, Gunawan Setiadi	The Use of Technology in Online Learning to Improve Discipline
7	14.45 – 15.00	066	Septian Aji Permana, Supri Hartanto, Ayuningrum Lia	Webinar Technology-Based Science Article Writing Training
8	15.00 – 15.15	103	Jayanti Putri Purwaningrum, Imaniar Purbasari, Gilang Puspita Rini, Nur Fajrie	Double Speed Electric Rotary Machine As Technology In Making Remitan Crafts
9	15.15 – 15.30	166	A Shah, Siti Nurul Fasehah, Mas Ayu Hassan, R Daud, Che Ghani Che Kob	Improvement of Corrosion Resistance of Tin Coated on Titanium Alloy for Biomedical Application
10	15.30 – 16.00	167	Ahmad Riyadi	Design of Forward Chaining for Identification Palm Oil Diseases Base on Expert System

ROOM 9

Moderator: Laela Sagita, M.Sc

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	027	Palupi Sri Wijayanti, Juang Kurniawan Syahruzah	Achievement of Pre-Service Teacher's Competency in SEA-Teacher project: Student's Perception
2	13.30 – 13.45	137	Siti Zaenap, Sri Utaminingsih, Santoso	Media Technology Takontikasi Games Based of Realistic Mathematics
3	13.45 – 14.00	090	Banu Santoso, Marti Widya Sari	Developing parking queue monitoring system using Wireless Sensor Network and RFID technology
4	14.00 – 14.15	075	Nendra Mursetya Somasih Dwipa, Bintang Wicaksono	Markov Regime Switching-Garch Modeling On World Oil Prices
5	14.15 – 14.30	125	Handayani Redjeki, Sukirman, Santoso	Education and Training Technology Increases Teacher Competence
6	14.30 – 14.45	052	Utami Soifah, Padrul Jana, Bambang Widi Pratolo	Unlocking digital literacy practices of EFL teachers
7	14.45 – 15.00	023	Khikmah Novitasari, Novianti Retno Utami	Being A Smart Parent: A Handbook for Educating Children Based On Multiple Intelligences
8	15.00 – 15.15	124	Retno Wulandari, Sri Utaminingsih, Mohammad Kanzunnudin	Teaching Material Technology Based On Local Wisdom
9	15.15 – 15.30	098	Yulia Venti Yoanita, Sinung Tirtha Pinindriya, Eli Kumolosari	The Influence of Gurney Flap to the Stability of Formula Car Rear Wing with Simulation
10	15.30 – 16.00	169	Wahyu Budi Saputra, Niken Wahyu Utami, Ibrohim Aji Kusuma	Developing Culture-Based Mathematics Learning Media with Adobe Flash for JHS Students

PARALLEL SESSION
DAY 2 (WEDNESDAY, 4 NOVEMBER 2020)

ROOM 1

Moderator: Kintoko, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	006	Titik Mulat Widyastuti, Wibowo	Android-Based Application Development as a Communication Media for Parents and Teachers In Addressing Early Childhood Bullying Behavior at SD Taman Sari 3 Yogyakarta
2	13.30 – 13.45	147	Harkati, Sukirman, Gunawan Setiadi	Improving on Teacher Performance, Work Motivation and Compensation at the Public Elementary Schools
3	13.45 – 14.00	089	Deni Setiawan, Marti Widya Sari, R. Hafid Hardyanto	Geofencing Technology Implementation for Pet Tracer Based on Android Using Arduino
4	14.00 – 14.15	104	Nur Khabib, Hilal Majdi, Su'ad	Development Of Social Science Teaching Materials By Using A Scientific Approach Based On The Surrounding Environment In Grade IV Students Of SD 1 Jati Kulon
5	14.15 – 14.30	041	M. P. Permana, Didik R., Bayu G.P., M. Amiruddin, Y. V. Yoanita	Development of Integrated Online Learning Content Distribution Module Based on Social Media for Beginners Online Teachers in Creating Learning Content Due to The Covid-19 Pandemic
6	14.30 – 14.45	148	Muhammad Imam Suwiji, Murtono, Su'ad	Science-Based Character Building
7	14.45 – 15.00	083	Novianti Retno Utami, Windi Wulandari Iman Utama, Herdi Handoko	Development of a Multirepresentation-Based Learning Model to Increase the Emotional Intelligence of 5 - 6 Years Old Children
8	15.00 – 15.15	084	L S Nadia, A Sutakwa, Suharman, D Amrih, A N Syarifah	Training of Frozen Cassava (Manihot esculenta) Processing to Increase Selling Value
9	15.15 – 15.30	100	Danang Widyawarman	Subsurface Identification Campus I University Of PGRI Yogyakarta using The Microtremor Wave Method

ROOM 2

Moderator: Andi Dian Rahmawan, M.A

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	102	Silvia Indriani, Sri Utaminingsih, Mohammad Kanzunnudin	Planting Self-Confident Characters Assisted By Technology And Science Through Reading Activities
2	13.30 – 13.45	002	Setyo Eko Atmojo, Beny Dwi Lukitoaji, Taufik Muhtarom	Improving Science Literation and Citizen Literation Through Thematic Learning Based on Ethnoscience
3	13.45 – 14.00	005	Puji Handayani Putri, Anis Febri Nilansari	The Information System Development of Prescription Screening Management in Public Health Center I Kotagede Yogyakarta
4	14.00 – 14.15	140	Wawan Shokib Rondli, Endang Danial, Sapriya	The Impact of Gusjigang: Production Technique, Skills and Independence of Citizens through Longlife Learning
5	14.15 – 14.30	009	T Heru Nurgiansah, Sigit Handoko	The Role of Cyber Crime Polda DIY in the Fight Against Online Prostitution
6	14.30 – 14.45	129	Indah Ariftian, Ahmad Hilal Madjdi, Murtono	Science-Based Quantum Learning Models In Elementary School
7	14.45 – 15.00	019	Luqman Hidayat, Yanuar Bagas Arwansyah	Application of Assistive Technology for Disabilities in Disaster Mitigation Training
8	15.00 – 15.15	071	Arista Natia Afriany, Faizal Ardiyanto, Ahsan Sumantika, Adhi Prakosa	Technical guidance to increase entrepreneurial capacity in feather duster SMEs, Karanglo village, Klaten Selatan district
9	15.15 – 15.30	154	Ahmad Shofa, Su'ad, Murtono	Development Of Learning Media Technology Based On Natural Science Local Wisdom Materials

ROOM 3

Moderator: Ekha Rifki Fauzi, M.T.

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	044	Tri Siwi Nugrahani, Harlina Safitri, Sulkhanul Umam, Evi Grediani	Improvement of Social Manufacturing Data Performance On Industry 4.0 Era
2	13.30 – 13.45	121	Ahmad Shofa, Su'ad, Murtono	Development of Learning Media Technology Based On Natural Science Local Wisdom Materials
3	13.45 – 14.00	078	S C Ningsih, T Sunanti	Developing Student Worksheet for Learning Independence
4	14.00 – 14.15	136	Yoga Heri Supratno, Murtono, Mochamad Widjanarko	The Influence of Student Motivation, School Environment, on Student Learning Achievement
5	14.15 – 14.30	080	Ramdhan Harjana, Dwi Putri Fatmawati	Utilization of NON B3 Waste as Learning Media in Online Class During the Pandemic
6	14.30 – 14.45	149	Hariyanto, Sri Utaminingsih, Santoso	Analysis of TBLA (Transcript Based Lesson Analysis) Sains Mastery of Mathematical Concepts
7	14.45 – 15.00	092	Nurirwan Saputra, Meilany Nonsi Tentua, Ratna Purnama Sari	The Development of Web-Based Correspondence Information Systems in University
8	15.00 – 15.15	067	M.M. Endang Susetyawati, Christina Eva Nuryani	Development Of High Order Thinking Skill High School Class Description
9	15.15 – 15.30	157	Noor Khamidah, Sri Utaminingsih, Mohammad Kanzunnudin	Utilization of Information Technology For Kudus Local Values

ROOM 4

Moderator: Dr. Septian Aji Permana, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	040	Siti Maisaroh, Nafisah Endahati	The Implementation of School Management in Preparing Budget Palnning at Elementary Schools in Bantul Yogyakarta
2	13.30 – 13.45	144	Anna Yuliwijayanti, Santoso, Achmad Hilal Madjdi	Manipulative Media Technology for Addition and Subtraction of Integers in Elementary Schools
3	13.45 – 14.00	086	Rani Eka Diansari, Frisca Dwi Agustin, Dekeng Setyo Budiarto, Ratna Purnama Sari, Yennisa	The Impact of Budgeting Participation, Public Accountability, Internal Control Systems, and village Financial Systems (SISKEUDES) on village Managerial Performance
4	14.00 – 14.15	106	Sulistiyoningsih Astriani R, Sri Utaminingsih, Sri Surachmi	Development of Ethno-mathematics based Mathematics Teaching Material Technology: A Needs Analysis
5	14.15 – 14.30	048	Okti Purwaningsih, Puguh Bintang Pamungkas, Dede Beny, Melinda Oktavia	Response Of Soybean Growth In Sandy Coastal Soil To Seaweed Compost And Biochar Application
6	14.30 – 14.45	116	Mita Kurnia Ulfah, Sri Utaminingsih, Irfai Fathurrohman, Sekar Dwi Ardianti	Thematic Textbook Based on Local Wisdom Combined with Animation Media Using Barcode Scanning Technology
7	14.45 – 15.00	087	Mahilda Dea Komalasari, Nina Widyaningsih	Teaching Material Based on Indegeneous System with Journalism Approach as a Model of Thematic-Integrated Learning for Student in Primary School
8	15.00 – 15.15	049	Vezir Ashyrnepesov, Victor Novianto	Contributing Factors to the Implementation of Guidance Process at Kesatuan Bangsa Bilingual Boarding School
9	15.15 – 15.30	159	Siti Nor Naimah, Suad, Sri Utaminingsih	The Leadership of Schools To Improve Teacher Performance In Al-Amin Kids Park

ROOM 5

Moderator: Bintang Wicaksono, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	021	Sukadari, Sunarti, Yulian Agus Suminar, Haryanto	The Implementation Of Portfolio Assessment In Assessing Integrated Social Science Learning Results Of Inclusion Basic School
2	13.30 – 13.45	054	E Sutanta, EK Nurnawati, C Iswahyudi, RA Kumalasanti	The Model Prototype of WebGIS-based for Organizational Asset Management
3	13.45 – 14.00	122	Sustiningsih, Sri Utaminingsih, Santoso	Development of Science Teaching Materials Based on STEM: A Needs Analysis
4	14.00 – 14.15	024	Ratna Purnama Sari, Yoga Prasetya Nugraha, Dekeng Setyo Budiarto, Rani Eka Diansari, Yennisa	How IT improve information quality of governmental financial statement
5	14.15 – 14.30	145	Mufaridah, Santoso, Achmad Hilal Madjdi	Thematic Learning Module Technology Based on Local wisdom
6	14.30 – 14.45	060	Sunggito Oyama, Aditya Wahana, Rudha Widagsa	A Web Based E-Archives Information System Design in Universitas PGRI Yogyakarta
7	14.45 – 15.00	138	Anton Widiyatmoko, Sri Utaminingsih, Santoso	Android-based Math Learning to Improve Critical Thinking
8	15.00 – 15.15	043	Muhammad Iqbal Birsyada, Siswanta	The Innovation of Nation Character Education Based on Historical Values of the Struggle of Pangeran Sambernyowo in the Era of Society 5. 0
9	15.15 – 15.30	161	Henri Nurhamid, Murtono, Sri Utaminingsih	Development of social studies teaching materials based on local wisdom of the Samin Society Class V Elementary School

ROOM 6

Moderator: Rianto, M.Kom

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	020	Supri Hartanto, Septian Aji Permana, Yitno Pringgowijoyo	Mind Mapping Based Mobile Learning System to Increase Student Creativity
2	13.30 – 13.45	134	Wiji Lestari Candra Suci, Murtono, Suryani, Fitri Budi	Constraints in Implementing Online Learning during the Covid-19 Pandemic
3	13.45 – 14.00	030	Rifki Irawan, Sri Wiyanah	Asynchronous Peer Feedback In EFL Writing
4	14.00 – 14.15	105	Oktri Suhartati	Flipped Classroom Learning Based on Android Smart Apps Creator (SAC) in Elementary Schools
5	14.15 – 14.30	076	Azhumna Hafidzatulistya, Padrul Jana	Mathematics Teachers' Perceptions of Using the Internet for Online Learning
6	14.30 – 14.45	113	Anisatun Hidayatullah, Su'ad, Mohammad Kanzunnudin	The Role of The Nawangsih Folklore in The Education of Elementary School Children in The Era of Technology
7	14.45 – 15.00	093	Ida Setiani, Meilany Nonsi Tentua, Sunggito Oyama	Prediction of Banking Stock Prices Using Naïve Bayes Method
8	15.00 – 15.15	004	Jaluna Febry Try Atmaja, Marti Widya Sari, Prahenusa Wahyu Ciptadi	Developing Application of Automatic Lamp Control and Monitoring System using Internet of Things
9	15.15 – 15.30	163	Kintoko, Titis Sunanti, Koryna Aviory, Hodiyanto, Siti Suprihatiningsih	Analysis of Students' Reasoning in Answering Number Stories using Realistic Mathematics Approach

ROOM 7

Moderator: Theofilus Bayu, M.Sc

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	008	Saptaningsih Sumarmi, Heru Kurnianto Tjahjono	Organizational Citizenship Behavior as Antecedents and Outcome In Era Technology
2	13.30 – 13.45	126	YulitaAyu Suryani, Sri Utaminingsih, Achmad Hilal Madjdi	Needs Analysis of Picture Story Book using Augmented Reality Technology
3	13.45 – 14.00	039	Paiman, Sukhemi, Nina Widyaningsih	Weed control technology to increase growth and yield of mungbean (Vigna radiata L.) in soils types
4	14.00 – 14.15	142	Siti Zulifah, Murtono, Santoso, and S Masfuah	Content validity of Android-Assisted ProblemBasedLearning-Oriented Illustrated Stories Teaching Materials
5	14.15 – 14.30	042	Wibawa, Titik Mulat Widyastuti	Improving Beginning Reading Ability By Using Macromedia Flash Application Media in SD. Klopo Sawit, Bangun Kerto Sleman
6	14.30 – 14.45	110	Aris Suwanggono, Murtono, Irfai Fathurohman	Analysis of The Need for Ethno-Digital Module Development Based on Language Politeness
7	14.45 – 15.00	064	Juang Kurniawan Syahruzah, Rifki Irawan	Social Media-Based Learning in Preparing Year-End Assessment Tests of English and Mathematics Subjects for Islamic Boarding School Students
8	15.00 – 15.15	070	D S Rini, I Sriliana, P Novianti, P Jana, S Nugroho	Spherical K-means method to determine earthquake clusters
9	15.15 – 15.30	099	Aldrin Febriansyah, Eka Widyaningsih, Radiaswari, Rachmat Wahyu Prabowo, Adinda Rafika Dani	Open Space Development Assistance at Rawa Kalibayem Tourism Area, Ngestiharjo Village, Kasihan, Bantul
10	15.30 – 16.00	165	Sukhemi, Ernawati	Determining Factors of Budgetary Slack in Local Governments

ROOM 8

Moderator: Juang Kurniawan, M.Pd

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	088	Fitri Susilowati, Suryanto	Forecasting LQ45 Shares Using ARIMA Method aim the COVID-19 Pandemic in Indonesia
2	13.30 – 13.45	038	Zidni Husnia Fachrunnisa, Baniady Gennody Pronosokodewo	Optimization Of The Bersih Indah Muja Muju Waste Bank Management System
3	13.45 – 14.00	128	Avif Septiana, Mohammad Kanzunnudin, Murtono	Illustrated folklore books as a simple technology to foster a culture of literacy
4	14.00 – 14.15	045	Muhammad Badri	Adoption of innovations online tutoring apps on high school students
5	14.15 – 14.30	022	Theofilus Bayu Dwinugroho, Yaning Tri Hapsari, Kurniawanti	Greenhouse Automation: Automated Watering System for Plants in Greenhouses using Programmable Logic Control (PLC)
6	14.30 – 14.45	111	Dinar Ayu Mirunggan Sari, Murtono, Irfai Fathurohman	The Usage Of Sunda Manda Media Based On Visualization Auditory Kinesthetic To Improve Motoric Skills
7	14.45 – 15.00	057	N Setiani, B R Aditya, I Wijayanto, A Wijaya	A Study On Awareness Of Bibliographic Management Software For The Academic Writing Activity In Higher Education
8	15.00 – 15.15	091	Rosalia Indriyati Saptatiningsih, Setia Wardani, Marti Widya Sari	Applying information and communication technology on learning model innovation of character education
9	15.15 – 15.30	018	H Wiranota, T T Wijaya	The International Students' Perception Towards Online Learning Using The Tencent Meeting During Covid-19 Outbreak
10	15.30 – 16.00	168	Laeli Nur Hasanah, Rosmauli Jerimia Fitriania	Effect of Frying on The Nutritional Composition of Catfish Nuggets (Clarias gariepinus) Substituted by Modified Cassava Flour (Mocaf)

ROOM 9

Moderator: Laela Sagita, M.Sc

No	Time (WIB)	Paper ID	Author(s)	Paper Title
1	13.15 – 13.30	062	Victor Novianto, Ibnu Romadhon	Social Changes After Transmigration In South Sumatera Since 1990
2	13.30 – 13.45	017	Sri Wiyanah, Rifki Irawan, Juang Kurniawan	Using PPP Method in the Process of Online Training and Strengthening EFL Teachers' Pedagogic Competence
3	13.45 – 14.00	056	N Fajrie, I Purbasari, D Setiawan	Analysis of the Wood Production Machine Process for the Application of Wayang Klitik Technology
4	14.00 – 14.15	058	A Iradianty, B R Aditya	Student Awareness of Digital Payment Services (Case Study in Indonesia)
5	14.15 – 14.30	063	Suharman Suharman, Sutakwa Adi, Nadia Lana Santika	Effects of Sucrose Addition to Lactic Acid Concentrations and Lactic Acid Bacteria Population of Butterfly Pea (Clitoria ternatea L.) Yogurt
6	14.30 – 14.45	025	Yune Andryani Pinem	Extrinsic Motivation Influencing Vocational Students' English Achievement on Hunting Bule Before and During Pandemic
7	14.45 – 15.00	028	Margala Juang Bertorio, Rahmat A. Hi Wahid, Nurul Jannah	Overview of Knowledge Levels of Osteoarthritis in Communities in Banjarwaru, Gilangharjo, Pandak, Bantul, Yogyakarta
8	15.00 – 15.15	012	Sri Widodo, Novi Andriyani, Hari Purnama, Vidya Vitta Adhivinna, Ratna Purnama Sari	The effectivity of accounting information system towards employee performance
9	15.15 – 15.30	099	Aldrin Febriansyah, Eka Widyaningsih, Radiaswari, Rachmat Wahyu Prabowo, Adinda Rafika Dani	Open Space Development Assistance at Rawa Kalibayem Tourism Area, Ngestiharjo Village, Kasihan, Bantul
10	15.30 – 16.00	170	Idris, E Utami, A D Hartanto, S Raharjo	Systematic Literature Review of Profiling Analysis Personality from Social Media
11	16.00 – 16.15	171	Yennisa, Ita Kartika, Ratna Purnama Sari, Rani Eka Diansari, Dekeng Setyo Budiarto	The Barriers of Innovation: Empirical research at MSMEs in the Special Region of Yogyakarta

PAPER ABSTRACT

001

The Prevention of Bullying in Early Childhood through The Javanese Culture of “Pitutur Luhur”

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Abstract. The purpose of this research was to identify the application of the "Pitutur Luhur" model for the prevention of bullying behavior in early childhood. This research uses a qualitative approach. The informant in this study is teachers, parents, and students of the Surya Marta Kindergarten. Data collection techniques are conducted by observation participants and in-depth interviews. The collected data is analyzed using domain analysis, taxonomy, compounds, and cultural themes. The results show that the Javanese culture of "Pitutur Luhur" can be formed through school collaborations and families to prevent bullying behavior. This can be known through the kindergarten education program that implements a curriculum with the learning model "Pitutur Luhur " by involving the participation of parents and teachers. The value of Philosophy "Pitutur Luhur " developed by Surya Marta Kindergarten is done through routine implementation in the learning applied covering various dimensions of life such as ethics and manners, a relationship of parents and children, fairness and truth, social relations, familiarity, mutual assistance, and tolerance. Fun learning activities by entering traditional Javanese elements can be more creative and enjoyable. The education of “Pitutur Luhur” is also able to introduce children to his ancestral culture full of life philosophy.

002

Improving Science Literation and Citizen Literation Through Thematic Learning Based on Ethnoscience

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Abstract. This study aims to improve the scientific literacy and citizenship literacy of elementary school students through Ethnoscience-based thematic learning. This research method is experimental research with a quasi-experimental design type—data collection techniques using test techniques, namely science literacy tests and citizenship literacy tests. Based on the results of the post-test analysis of data Literacy of science obtained t value = 3.781> t table = 1.998 and t-test results of the test of citizenship literacy got t value = 4.971> t table = 1.998. It means that there are significant differences in scientific literacy and civic literacy in the experimental and control groups. While the N value of scientific literacy gain in the control group is 0.43 (moderate) while in the experimental group is 0.73 (high) and citizenship literacy in the control group is 0.34 (medium) while in the experimental group is 0.73 (high). Based on these results, it can be concluded that there was an increase in scientific literacy and high citizenship literacy in the experimental group and increased science literacy and moderate citizenship in the control group.

003

Content Validity of Multicultural Learning System Instruments at IAIN Ambon, Maluku

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Abstract. This study was aimed to prove the content validity based on the Aiken's V index analysis and described the steps to prove the content validity of the multicultural learning system instrument at IAIN Ambon. This research was a development research. The product developed was a multicultural learning system instrument at IAIN Ambon. Steps for developing the instrument used by the researchers refer to [1]. The populations here were all students at IAIN Ambon and the sample determination was non-probability sampling with purposive sampling technique. [2] explains that the purposive sampling technique is selected based on certain criteria, in this case the criteria were students who have taken multicultural education courses at IAIN Ambon. The results showed that: 1) most of the Aiken's index on each item > 0.80 with a very high validity category, so the validity coefficient was accepted and considered appropriate. It could be said that the instrument was content valid, 2) the instrument could be used because it had been fulfilled in substance, construction, and aspects of the language based on the results of the validity test of Aiken's V.

004
Developing Application of Automatic Lamp Control and Monitoring System using Internet of Things

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Abstract. This research aims to build a prototype of an automated light control and monitoring system based on internet of things. This system controller uses Wemos D1 microcontroller with integrated ESP8266 Wi-Fi module, which functions to send and receive input data on the Internet of Things (IoT) platform, namely Firebase. Input devices in this system are in the form of two types of sensors namely the LDR sensor and the PIR sensor where the LDR sensor functions as a measure of light intensity and the PIR sensor functions as a detector of human motion in a room. The relay module is used in this system as a substitute for a conventional switch to be automatic, which functions to connect and break the 220v flow to the lamp based on instructions from wemos D1. This system uses 2 lamps as an output device, where the lamp is placed in a clear plastic box formed as a room. In room 1, the lamp will turn on if a human presence is detected. In room 2, the lamp will turn on if the room's lighting conditions are dim or dark and a human presence is detected. In addition, the control and monitoring system of this lamp can also be controlled via the android application without a certain distance and only requires an internet connection.

005
The Information System Development of Prescription Screening Management in Public Health Center I Kotagede Yogyakarta

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Abstract. Write the correct recipe will have an important impact on the patient's recovery. Writing recipes by hand shows a fairly high error compared to using computers. Errors in prescribing will have undesired effects so that patients need longer treatment, greater costs, and even death. The purpose of developing this system is to facilitate the writing of patient prescriptions using a computer in the form of a patient prescription screening management information system in the health center Kotagede 1. The development of the design of this system model uses the waterfall method. The stages begin with requirements analysis, system design, implementation, integration & testing, operation & maintenance. Sample data taken from the health center in Yogyakarta consists of prescription data, drug data, doctor data, disease diagnosis data.
Keywords: *drug data, prescription data, model design, implementation, waterfall method, prescription writing, management information systems, prescription screening*

006

Android-Based Application Development as a Communication Media for Parents and Teachers In Addressing Early Childhood Bullying Behavior at SD Taman Sari 3 Yogyakarta

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Abstract: The recent phenomenon of Bullying has unseated the world of education. It requires educators to develop products that can address that behaviour. The study aims to formulate android-based apps as a medium of communication between teachers and parents to address bullying behaviour both at school and at home. This research is development research with 4D development models (Define, Design, Develop, and Disseminate). The subjects of his study are students class 1 and class 2, parents, teachers, parents of students. This hypothesis test uses paired samples t-test by comparing pre-test and post-test scores before and after using the adroit application. The results showed that the use of android applications as a communication medium for teachers and parents had a significant impact on improving early childhood bullying behaviour in school and at home. As for the results of the test, the t value of 29,306 with sig (2 tailed) 0.000 > 0.05. It indicates that there is a difference between the pre-test value and the post-test value because the t score found to be positive then this shows that the post-test cost is lower than the pre-test value which means a decrease in bullying behaviour in those children

Keywords: Bullying, early childhood, android, communication.

007
Parents' Difficulties in Learning Assistance during COVID-19 Era

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Abstract. This research aimed at describing difficulties faced by parents of State Elementary School of Rejodadi, Kasihan Sub-district, Bantul Regency, Special Region of Yogyakarta in learning assistance during COVID-19 pandemic era. The descriptive survey of quantitative method was employed to carry out this research. The data collecting technique was done by filling out an online questionnaire through Google Form. The collected data reached were 124 of 178 parents. Data analyses used were data collection, reduction, data display, and conclusion. The data analysis technique used was modus and percentage. This research revealed that there were several difficulties faced by parents in doing learning assistance including internet data (28%), time (28%), knowledge (23%), and communication device (15%). Besides, school subject was also included as one of parents' difficulties where mathematics (46%) and local language (25%). **Keywords:** parents' difficulties, learning assistance, COVID-19 era

008
Organizational Citizenship Behavior as Antecedents and Outcome In Era Technology

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Abstract. The paper aims to discuss the concept of Organizational Citizenship Behavior (OCB), as an antecedent of Organizational Justice (OJ), and the consequences of Organizational Performance (OP). The method used is to review theories and relevant literature to reconstruct propositions of the possible influence of the four dimensions of OJ. The dimensions are distributive Justice, Procedural Justice, interpersonal Justice, and informational Justice to OCBI and OCBO, as well as their consequences on organizational performance. The results of the study propose propositions from the OJ dimension, namely the distribution of Justice, Procedural Justice, interpersonal Justice, and informational Justice can influence OCB Individual and Organizational OCB. They can have an impact on organizational performance.

009

The Role of Cyber Crime Polda DIY in the Fight Against Online Prostitution

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Abstract: *This article aims to find out the role of the Polda DIY cybercrime team in addressing social problems, namely online prostitution. This research uses qualitative methods with a case study approach. Data collection through observation, interviews, documentation, and literacy. The research site is conducted in the Malioboro area. The research object consists of police officers from Polda DIY and some PSK. The results of this study produced the role of the Polda DIY cyber crime team in tackling the online prostitution among them, cyber patrol and Hotel or inn raid.*
Key Word: Cyber Crime, Online Prostitution, Polda DIY

010

The Best Selection of PIP Scholarship: AHP-TOPSIS Vs Fuzzy AHP-TOPSIS

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Abstract. The Smart Indonesia Program (PIP) is a program created by the government to address education problems in Indonesia. Selection of students who are entitled to PIP assistance is the main problem in this study, so this study aims to provide a comparison and evaluation of the selection of students who are entitled to PIP assistance. Previous research has been evaluated using the AHP-TOPSIS method and in this study comparing the method between AHP-TOPSIS vs Fuzzy AHP-TOPSIS, the purpose of this study is to obtain the effectiveness of both methods. The criteria in this study are the impact of natural disasters, physical disabilities, the convict's family, PKH / KPS / KKS holders, destitute, orphans, parents' income and conflict areas. In this study, the results show that the two methods have the same ranking results, even though they have different weight values. This is because the importance value of each criterion is close together so that the results of the ranking of the two methods are the same. From these results, it can be concluded that the two methods are feasible to be used in the PIP scholarship selection, where the ranking of the choices is in alternatives 2 3 and 4.
Keywords: AHP-TOPSIS; Fuzzy AHP-TOPSIS; PIP; Scholarship; DSS

011

The Appropriate Technology In Cultivating Mushrooms By Street Children In Hafara

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Abstrak The purpose of this study was to determine the application of appropriate technology in mushroom cultivation by street children in Hafara

This research method with a qualitative approach with phenomenological methods. Collecting data by observation, interviews, and documentation. Observations are carried out in a participatory, real, disguised, and unstructured manner to ensure that the object in this study is an informant in the location to be studied. Interviews were carried out by random sampling to obtain data and information that could be used in this study. Information can be obtained from the manager of the Hafara social institution, 2 caregivers / coaches and 4 street children who live in the Hafara social institution to obtain information on appropriate technology in mushroom cultivation by street children in Hafara.The appropriate technology in mushroom cultivation by street children in Hafara is very simple and uses easily obtained raw materials. Spraying leri water (washing rice) is carried out after the fungus appears, it will increase fertility so that the mushroom yield is more, so the money earned from the mushroom harvest is more. It is hoped that the recommendations for mushroom cultivation in Hafara can be widely marketed in collaboration with relevant agencies both nationally and internationally.

Keywords: The Appropriate Technology, Mushrooms , Street Children and Hafara

012

The effectivity of accounting information system towards employee performance

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Abstract. Employees are part of organization that plays important role to the organizational development. They should facilitized properly to make their work easier and convenience to do. Especially in generate financial statement, an accounting information is believed to be a solutive tools to simplify employee's work and can boosted employee performance. The purpose of this research is to discuss the effect of accounting information systems, utilization of information technology and suitability of tasks towards employee performance. This research using 120 employees of Badan Kredit Kecamatan (BKK) in Kebumen Indonesia such as bookkeeping, secretary and coordinator of BKK. Data were analyzed by multiple regression analysis and generates the conclusion that all of variable used in this research bring effects to the employee performance.

013

The Important Of Governmental Financial System Towards Information's Quality Of Financial Statement (A Case Study From Purbalingga's Sub-District)

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Abstract. One of the responsibility of public sector is to serve a financial statement to the community, especially public sector who granted financial aid from central government. It is a must for them to publish their financial statement to the communities. The use of governmental financial system is important to help public sector manages their finance. The aim of this study is to know how the implementation of governmental financial system can improve information's quality of financial statement. This research use 25 sub-district and generates 80 respondents represents the apparatus in every sub-district in Purbalingga Indonesia. Using multiple regression analysis, this research concludes that the use of governmental financial system giving an impact to information quality of financial statement.

014

An Analysis of Online Shoppers' Acceptance and Trust toward Electronic Marketplace Using TAM Model

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Abstract. Changes in technology affect business activities. The presence of the internet opens opportunities for sellers to expand their marketing reach. E-marketplaces can be utilized by sellers to broaden the marketing reach of their products. From the consumer side, the presence of the e-marketplace presents many choices in buying goods. The e-marketplace makes it easy for buyers and sellers to deal with products. This study aims to evaluate attitudes toward online shopping. Perceived usefulness, perceived ease of use, and trust as independent variables. Attitude toward online shopping as a dependent variable. Two hundred buyers in one of the biggest e-marketplace in Indonesia as analysis subjects to complete the questionnaire in this study. Multiple regression analysis to test the research model. The results show that perceived usefulness, perceived ease of use, and trust affect online shopping attitudes**.**

015

Rethinking of Learning Media Through Optimizing the Use of Social Media (Instagram) in Learning Activities in Schools

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Abstract. The purpose of this study is to reveal in depth the readiness of teachers in utilizing learning technology as a response to community needs 5.0. One of them is by utilizing social media (Instagram). The data in this study were obtained through observation, interviews and documentation aimed at several informant teachers, students and the school with a purposive technique. Considerations of teachers choosing Instagram as a learning media include (1) Instagram being the most popular social media in the community, (2) Instagram is very popular among millennials, (3) Instagram is the most social media owned by students, (4) media for approaching students, (5) a means of controlling the character of students, and (6) the most important is suitable and relevant to the type of material being taught. Strategies used by teachers in utilizing Instagram in learning by designing learning plans in a participatory way involving students. In implementing Instagram learning more widely used to share material, assignments and discussion forums. The learning situation is conducive because students' enthusiasm in using Instagram is very good, Wi-Fi access is supporting, and there is facilitating IT utilization training for teachers and students. Even so learning has not been fully achieved because of the limited content from Instagram that cannot cover learning needs and not all students have adequate socio-economic support.

Keywords: Learning Activities, Instagram, Social Media, Learning Technology

016
Experimental Study of Electrode Design and Configuration for Bioimpedance Measurement

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Abstract. Each material has different electrical characteristics. One of the electrical characters of materials is impedance. This characteristic used to specify the components of the material. To determine the impedance value of materials frequently used method is the injection of current through a pair of electrodes. This study will make effective electrode designs. The electrode designs used are circular with 1mm, 5mm, and 15mm diameter variations, with 3mm, 7mm, and 11mm configurations. The electrode material used is a copper plate (PCB). The results of the graph on mineral water show that the 11mm configuration produces a logarithmic graph. This result is due to the total impedance of mineral water affected by the resistance component and capacitance at the electrode. The measurement of sugar solution shows that 5mm diameter is more sensitive than 15mm diameter. Then the effective electrode design for impedance measurement is 5mm diameter with an 11mm configuration.

017

Using PPP Method in the Process of Online Training and Strengthening EFL Teachers' Pedagogic Competence

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Abstract. English at the elementary school level serves as local content by the policies of each school; as a result, it makes the time allocation of English subject reduced and likewise, the teachers' pedagogical competence. The study aims to describe the process of online training and strengthening in fostering EFL teachers' pedagogic competence. It used a qualitative descriptive method and involved three teachers from Rejodadi Elementary School, which observation and interview are the research instruments. The results showed that the process of training and strengthening in fostering teachers' English pedagogic competence used Presentation, Practice, and Production (PPP) method. "Presentation" was applied to explain the materials related to teaching English at an elementary level such as the students' characteristics, teaching methods, strategies and media, "Practice" was implemented to drill the teachers' skills about the materials presented, and in "Production", teachers implemented what they had got from the previous steps by conducting a micro-teaching activity. Therefore, the process of online training and strengthening in fostering EFL teachers' pedagogic competence used PPP method in achieving its goal.

018

The International Students' Perception Towards Online Learning Using The Tencent Meeting During Covid-19 Outbreak

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Abstract. The aim of this study is to find the international students' perception towards online learning using the Tencent Meeting, or the international version is VooV. The descriptive qualitative design was conducted in this study. The total of participants were thirty students in Guangxi Normal University, China academic year 2019/2020. The data was obtained using an end-of-semester questionnaire and then follow-up interviews. The researchers examined the students feedback and found that in general the Tencent Meeting is well received by the students. The participants agreed that online learning using the Tencent Meeting made the learning process well managed, the Tencent meeting was easy to use, the Tencent Meeting was affordable to learn. This point, the participants were enthusiastic in distance learning and considered that online learning using the Tencent Meeting was efficient during COVID-19 outbreak. At last, the respondents recommended this application to the other students. Drawbacks and suggestions for improvement were also discussed.

019

Application of Assistive Technology for Disabilities in Disaster Mitigation Training

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Abstract. Disaster mitigation must be understood by all parties, including persons with disabilities who are categorized as particularly vulnerable to disaster impacts. This paper aims to see the application of appropriate assistive technology for persons with disabilities in a disaster emergency in the setting of disaster training and simulations conducted at SLB Negeri 1 Bantul. The right and accessible technology will help and facilitate disabilities in coping with disasters. Engineering training materials and the use of assistive technology for disabilities are concise necessary, this is done to accommodate the types, characteristics, needs, and services of disabilities in disaster mitigation and simulation activities. This training using assistive technology is carried out for disabilities to accommodate all rights and improve the functions and independence of individuals with disabilities so that they have active participation in disaster mitigation and simulation activities.
Keywords: assistive technology, disaster mitigation, disability

020

Mind Mapping Based Mobile Learning System to Increase Student Creativity

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Abstract. Authentic online learning is applied at the time of pandemic corona as a strategy to reduce face-to-face in the learning process. The rise of use handphone, gave the idea to implement a mind mapping-based mobile learning system. This research aims to provide an overview of the need to improve student creativity by using mobile learning system-based learning. The study used the class action research method, using the Kemmis and Taggart models. The implementation of research has been conducted with two cycles, through stages of planning, implementation, observation and reflection. The research object was 40 people consisting of 15 males and 25 women. The programs used in this study are using Microsoft PowerPoint, ISpring, and Website2apkbuilder. The research object is a student of Semester II Civics Education, University PGRI Yogyakarta validity of data using face validity. Based on the results of the study obtained data that the use of mind mapping by using mobile learning system has an impact on increasing student creativity. It can be examined from the results of the student creativity evaluation on pre-research with the average value of 59.41 to 78.21 at Cycle 1, and at 2 increased back creativity to 82.03. Mind mapping based mobile learning system can be an online learning alternative by giving the program integrated in one semester. This learning Program can reduce the use of Internet quota because it can be learned online through Android application.
Keywords: Android, learning, information technology

021

The Implementation Of Portfolio Assessment In Assessing Integrated Social Science Learning Results Of Inclusion Basic School

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Abstract. With the background of the importance of an assessment system that can measure students' abilities cognitively, affective, and psychomotor, an assessment is needed that can measure student learning outcomes which can not only be measured by scores through written tests but so that the quality of Integrated Social Studies learning can develop better required a portfolio assessment which is part of the class assessment.This study aims to examine the use of portfolio assessment as an alternative to classroom assessment in the Integrated Social Studies learning process in inclusive elementary schools by using qualitative research methods and case study designs. This research was conducted from February to June 2018 in five inclusive elementary schools in Sleman Regency.
The results in this study are: (1) conceptually the teacher has understood the portfolio assessment, (2) the resulting planning designed by the teacher is a learning tool in the form of a syllabus, lesson plans, instruments, and assessment system, (3) the teacher is able to develop and carry out a portfolio assessment with well, (4) produced national or international journal articles.

Keywords: *Portfolio Assessment; Integrated Social Studies Learning Outcomes; at Inclusion Elementary School*

022

Greenhouse Automation: Automated Watering System for Plants in Greenhouses using Programmable Logic Control (PLC)

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Abstract. Automation is a technology used to carry out work processes or procedures without human assistance. Greenhouse automation is carried out related to the many operational activities in the greenhouse that involve many human repetitive activities. Some of them are related to fertilizing, watering, spraying pesticides and others. In the current era of the industrial revolution 4.0, manual activities that use human labor began to diminish and were replaced with automated systems and devices in order to streamline and streamline the operation of a work field, where monitoring and control of processes also began to be carried out wirelessly or via the internet. PLCs can be defined as micro-computer based controllers that use instructions stored in memory that can be programmed to implement logic, sequencing, timing, counting and arithmetic functions through digital or analog input / output (I / O) modules , to control machines and processes. This PLC is commonly used in the industrial world as an automation tool for production machines. PLC can be implemented as an automation tool in a greenhouse in this case as an automatic watering plant tool. This research resulted in a prototype of an automatic watering system on a clock-based and sensor-based greenhouse that can run simultaneously on the same PLC.
Keywords : Greenhouse, Automation, PLC, Clock, Sensor

023

Being A Smart Parent: A Handbook for Educating Children Based On Multiple Intelligences

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Abstract. Recognizing the intelligence of children is an important thing to do by parents and teachers to determine the education that will be received by children. They also need enough information to find out how children's education can accommodate each child's intelligence tendencies. This research is a development study with a 4D floating model (Define, Design, Develop, and Disseminate). Based on the result of the handbook assessment, it can be concluded that the quality of the handbook, in general, is very good with the percentage of ideal reaching is 93.22%. This means that the handbook to be used to educating children based on multiple intelligences.

***Keyword**: Handbook, Parenting, Multiple Intelligence*

024

How IT improve information quality of governmental financial statement

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Abstract. Information technology is an intangible asset invested by every institution in this world. In the public sector, the role of information technology is needed in generating governmental financial statement. The aims of this study is to know factors that influence information quality of governmental financial statement such as information technology, internal control system and regional financial accounting system's implementation. This research using 72 respondents who worked in public government institution as head or staff of accounting division. Using multiple linear regression analysis, this research delivers some conclusions. The result proves that information technology and regional financial accounting system's implementation has positive impact to increase information quality of governmental financial statement while internal control system giving no effect to information quality of governmental financial statement.

025

Extrinsic Motivation Influencing Vocational Students' English Achievement on *Hunting Bule* Before and During Pandemic

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Abstract. Motivation drives learners to achieve their goals of learning including vocational students with work-oriented study. External pressures, expectation or rewards pose different challenge when it comes to pandemic situation. This study fills gap by examining vocational students' elements of extrinsic motivation before and during Covid-19 strike to accomplish final task to interview English natives and their effects on final achievement. Respondents were vocational students (n=75) participated in English class for two semesters in a row (before and during pandemic). Students' motivations on doing "*Hunting Bule*" before (x1) and during (x2) pandemic were measured. Data were later analyzed using variance and interpretation. External motivation before and during pandemic are proven to give contribution to the final score. However, some factors in one variable seemed to outperform the other in vice versa. Technology using is considered both motivational and demotivational for students during the pandemic, yet is good to accelerate education industry 4.0.

Keywords: *instructional scaffolding, ESP, extrinsic motivation, technology driven task*

026

Identifying Problems on Fostering *HOTS*: Bridging the English Teaching and the Development Of Critical Thinking

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Abstract. This research sheds a light to readers the basic problems the students face to be engaged in the HOTS classroom. It is expected that the teachers and lecturers could find more myriad, various and appropriate solution and teaching method to solve problems on HOTS.This is a descriptive qualitative research based which is fully based on the analysis of students' questionnaires. 11 students from non-English department were administrated as the respondents to gain the research data about their understanding on the research paper and their capabilities to find alternative solution for the problems in every research paper. Those respondents are required to answer the questionnaire that has been prepared as a media to reveal their problems on understanding the research paper and finding the alternative solution. It is revealed from the questionnaire that students have difficulty in comprehending the research papers due to the minimum exposure to the academic written English. It can be explained by the low vocabulary, low comprehension on sentence structure and meaning, those two factors effect the students' difficulties on finding the alternative solutions.

Keywords; *HOTS, Research Papers, Language Comprehension and Production*

027

Achievement of Pre-Service Teacher's Competency in SEA-Teacher project: Student's Perception

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Abstract. This study aims to determine the perceptions of SEA-TEACHER project students at University Of PGRI Yogyakarta (UPY) towards achieving competence in implementing the SEA-TEACHER program. This research is descriptive. The research variable is the achievement of competencies that were emphasized concerning microteaching, time allocation, and the perception of optimizing the implementation of the program from students, and the program patterns expected by students. The study population was students practicing the UPY SEA-TEACHER program that began in 2017 to 2019 while the research sample were students of mathematics education and elementary teacher education courses. Data collection techniques were done by questionnaire, documentation, and interview. Data analysis techniques using qualitative analysis and quantitative analysis. Qualitative data analysis will describe the achievement of competency categorization in the implementation of the SEA-TEACHER program. In contrast, quantitative data analysis will show the magnitude of the categorization of these variables. The results showed that the achievement of competency through the SEA-Teacher program was included in both categories with the description: 83.3% of respondents stated that the implementation of the SEA-Teacher program was interrelated with microteaching, 91.7% of respondents said there were no difficulties in allocating time, optimizing performance the program was stated to be optimal as indicated by 58.3% of respondents stated optimal and 25% of respondents stated very optimal, and there was an expectation of the implementation of the SEA-Teacher program that conducted microteaching with English at least one meeting.

Keywords: SEA Teacher, Achievement, Preservice teacher, competency

028

Overview of Knowledge Levels of Osteoarthritis in Communities in Banjarwaru, Gilangharjo, Pandak, Bantul, Yogyakarta

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Abstract. Osteoarthritis (OA) or arthritis is the most common degenerative joint disease and is a significant health problem worldwide. OA can occur in all joints, and knee OA is the most common type suffered by patients. This study aims to determine the level of knowledge about osteoarthritis in the community in Pedukuhan Banjarwaru, Gilangharjo, Pandak, Bantul, Yogyakarta. This research method uses quantitative research, with a simple descriptive method to obtain an overview of the level of knowledge about osteoarthritis in the community in Pedukuhan Banjarwaru, Gilangharjo, Pandak, Bantul, Yogyakarta. The population in this study is the community in Pedukuhan Banjarwaru, Gilangharjo, Pandak, Bantul, Yogyakarta. Measurements used to measure the description of the level of public knowledge using six questions including definitions, risk factors and symptoms of OA compiled by researchers. The results showed that from 75 respondents, there were 37 people (49.33%) had a high level of knowledge about the definition and symptoms of OA. Fifty-seven people (76%) knew that OA was included in the category of non-communicable diseases. As many as 34 people (45.33%), 47 people (62.67), and 28 people (37.33%) knew the risk factors for sex, age and weight in the onset of OA. Based on the results of the study, it can be concluded that the community in Pedukuhan Banjarwaru has the right level of knowledge about the definition and symptoms of OA. An excellent level of knowledge about the age factor in the risk of OA and OA diseases included in the category of non-communicable diseases.

029
Improving Students' Mathematical Self-Regulated Learning with Modified Moore Method

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Abstract*. The research is aimed to describe the students' mathematical self-regulated learning who follow the learning by modified Moore method and students who follow direct instruction in Linear Algebra courses. This research is quasi experiment with nonequivalent control group design. The research instrument used questionnaire of mathematical self regulated learning. Data analysis techniques used descriptive statistics and inferential statistics. The result of the research shows that: the students' mathematical self-regulated learning with modified Moore method is better than the students' mathematical self-regulated learning with direct instruction. The improvement of the students' mathematical self-regulated learning with modified Moore method is better than students with direct instruction. Learning using the modified Moore method can be used to develop students' mathematical self-regulated learning. Therefore, lecturers can use this learning as an alternative in Linear Algebra courses*

Keywords: Modified Moore method, direct instruction, students' mathematical self regulated learning

030
Asynchronous Peer Feedback In EFL Writing

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Abstract. COVID-19 Pandemic encourages teachers to be more creative in varying the learning strategy in online learning; one of the activities that can be tried by them is asynchronous peer feedback. The research aims to explore deeply about the practice of peer feedback through students' asynchronous online discussion on Edmodo conducted towards EFL writing and give vivid explanations about the students' responses toward that practice. By employing observation and open-ended questionnaires of 38 non-English university students as its data collecting technique, qualitative descriptive research is the method of this research. The results of the study showed that firstly, asynchronous peer feedback activity was conducted by following the steps of a scientific approach, which were observing a business letter, questioning about its format and language, finding many sources to answer the questions, answering them and conducting the activity of peer feedback. Secondly, 58% of students responded that asynchronous peer feedback was a challenging activity to do because they were aware of the incompetence of writing a good business letter. The problem of the system resulted in this factor more significant. Meanwhile, the rest said that this activity was easy to do because they felt that they could revise their peers' works and assumed that this kind of business was routine to do. Therefore, Asynchronous peer feedback can be implemented in the class where the students have sufficient language ability and confidence to give feedback to others.

Keywords: Asynchronous Peer Feedback, E-learning, Writing

031

Spatial Utilization for Public Activities On The Boundary of Railway line at Mejing and Sedayu, Special of Yogyakarta

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Abstract *Street and railways crossing is considered as area prone to accidents, specially crossing area without safety barrier. However, this vacant space attract more visitors from surrounding residential area. On certain hours of the day people use this space to interact, socialize, play and spend they pastime while train watching from the rail edge. Street vendors also contribute to the crowding of the area. Utilization of space in surrounding street-railways crossing as public space is caused by the lack of urban public space around residential area, in neighborhood scale as well as in district to town scale. This phenomenon, creates organic and spontaneous urban public space. Observing the Mejing and Sedayu crossing, we might see the vibrant activities creates by local community. Using the vacant and spacious space as playground, social space, culinary space, or just passing time doing train watching are some example of vacant public space utilization.*

032

Recreational Mathematics Activities to Enhance Students' Mathematics Achievement and Learning Motivation

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Abstract. Recreational mathematics is an activity designed to make students happy to learn and understand mathematical concepts. This study aimed to determine the effect of the implementation of recreational mathematics on learning achievement and learning motivation by implementing recreational mathematics, and to find out how the application of recreational mathematics by grade 5 teachers of SD Negeri Bhayangkara Yogyakarta to foster a sense of joy in learning among their students. This research is one group pretest-posttest design. The research instrument used was a questionnaire, observation sheet, and test. This research shows the effect of the implementation of recreational mathematics on learning achievement and learning motivation significantly. This is based on the paired sample t-test for pretest and posttest data; it can be seen that the sig value is 0.000, and the average posttest score is 97.8571, and the pretest is 82.8571. The paired sample t-test on the motivation value also shows the sig value of 0.043, and the average final motivation value is 52.21, while the average initial motivation value is 49.07. Furthermore, there are efforts from the teacher to be able to implement recreational mathematics activities, namely the desire to develop other card games through materials from researchers.

Keywords: Recreational Mathematics, Learning Outcome, Learning Motivation

034

The performance of information systems : Emprical research on Government Organization

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Abstract: This study aims to examine the effect of user involvement, personal technical abilities, top management support, education & training programs, and formalization of information systems development on the performance of accounting information systems in regional government organization (OPD) in Sleman Regency. The number of samples used was 76 respondents with a purposive sampling method. The multiple linear regression is used as a technique analysis. The results of the study prove that the ability of personal skills and education & training programs has a positive effect on the performance of accounting information systems. In contrast, user involvement, top management support, and formalization of information system development do not affect the performance of accounting information systems.
Keywords: personal technical skills, education and training programs, the performance of accounting information systems

035

Development Of Scaffolding Based Demonstration Method To Improve Language Abilities Students Of PGRI University, Yogyakarta

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Abstract. This study develops a scaffolding-based gesture demonstration method which is a combination of the demonstration method with sign language, using Vygotsky's scaffolding principle, or in other words demonstrating something using scaffolding-based sign language to facilitate the absorption of sign vocabulary for students so that students' sign language skills improve. The demonstration method itself is a teaching method by using demonstrations to clarify an understanding or to show how a certain formation process goes to students. The purpose of this study is to develop a demonstration method that combines the demonstration method with sign language using the scaffolding principle of Vygotsky to make it easier for students to master sign language so that it can improve their sign language skills in PGSD class students of PGRI University Yogyakarta. The results of this study indicate that the scores of students 'sign language skills before using the scaffolding-based gesture demonstration method can be categorized as low, while the results of sign language skills after product testing can be categorized as moderate, indicating that there is an increase in students' sign language skills after using the scaffolding-based demonstration method

Keyword: Sign language, demonstration method, scaffolding

036

Evaluation Of Character Education Strengthening Programs In Culture-Based Schools

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Abstract.This study aims to: (1) evaluate the implementation of the character education strengthening program in culture-based schools, (2) provide recommendations to principals, teachers, and schools to improve character education strengthening programs. This type of research is program evaluation with formative evaluation through a qualitative approach. The research subjects included: (1) two culture-based state junior high schools, namely SMP Negeri 3 Banguntapan, Bantul and SMP Negeri 1 Jetis Bantul, (2) two school supervisors; (3) Principal of SMP Negeri 3 Banguntapan and Principal of SMP Negeri 1 Jetis, Bantul, (4) three teachers of SMP Negeri 3 Banguntapan Bantul and three teachers of SMP Negeri 1 Jetis Bantul. Data were analyzed using data analysis by Milles & Huberman which includes: data reduction, data presentation, and data verification. The conclusions of the research results are: (1) the school is ready to implement a character education strengthening program supported by a curriculum that is already integrated with character education, although the management and carrying capacity of infrastructure still need to be improved; (2) the percentage of the implementation of strengthening character education in learning is quite good; (3) program funding support is borne by BOS funds from the government; (4) the process of monitoring and evaluating the implementation of the character education strengthening program is carried out periodically by school supervisors in the substance of learning; and (5) the obstacles faced in general are funding issues that need to be added, not all teachers have implemented character education in learning, and the harmonization of program implementation between schools, families and communities still needs to be improved.
Keywords: program evaluation, character education, culture-based.

037

Training Class Action Research, School Action Research And Writing Of Scientific Articles For Teachers And Principals Of Basic School In Banyuurip Purworejo

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ABSTRACT

This community service aims to help improve the ability of teachers and school principals in preparing classroom action research proposals, school action research, and writing scientific articles on research results. This community service is carried out through the virtual zoom meetting method with three stages of activities, namely: 1) providing classroom action research materials, arranging instruments, and compiling research reports; 2) provide material for school action research, preparation of instruments, and preparation of reports; 3) provide material for writing scientific articles in research journals. The first activity was attended by 20 teachers and school principals. The second activity was attended by 18 teachers and school principals, and the third activity was attended by 17 teachers and school principals. The training activities resulted in the following findings: 1) the understanding of teachers and principals in the preparation of classroom action research proposals improved; 2) the understanding of teachers and school principals in preparing school action research proposals improved; and 3) the understanding of teachers and principals in writing scientific articles has improved.
Keywords: training, classroom action research, school action research, scientific articles.

038
Optimization Of The Bersih Indah Muja Muju Waste Bank Management System

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Abstract. The Bersih Indah Muja-Muju Waste Bank has a problem that is not having a good management system. The team divided the problem into three parts, namely the absence of procedures at the Bersih Indah Muja Muju waste bank, untidy and disorderly administrative records, and no procedure for collecting garbage. The solution the team made to overcome these problems was counseling and mentoring to residents regarding the waste bank management system, administrative records and waste collection procedures. The result of this activity is that the Bersih Indah Muja Muju Waste Bank can apply standard operating procedures that have been designed by the team, can carry out administrative records neatly, and waste can be classified according to its type. The hope is that the Bersih Indah Muja Muju waste bank can implement a good management system consistently so that it can develop progressively.

039

Weed control technology to increase growth and yield of mungbean (*Vigna radiata* L.) in soils types

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Abstract. Mungbean is a plant that is cultivated by most of the people of Indonesia at the time before the dry season in the former paddy fields. The presence of weeds in crops that are not controlled by farmers caused the low yield of mungbean obtained by farmers. This study aims to determine the weed control technology to increase the growth and yield of mungbean in soil types. This experiment is a factorial experiment arranged in a completely randomized design (CRD) and repeated three times. The first factor is the weed control technology consisting of three kinds: weedy, hand weeding, and tool weeding. The second factor is the type of soil that consists of four types: coastal sand, latosol, volcanic, and regosol. The results showed that weed control at the age of 20 days after planting (DAP) could increase the growth and yield of mungbean in soil types, except in volcanic soils. Weed control with the hand weeding in coastal sand can give a higher production than tool weeding. Weed control technology with the hand and tool weeding way gives the results of mungbean relatively similar to latosol and regosol soils.
Keywords: weed control, mungbean, yield, soil types

040

The Implementation of School Management in Preparing Budget Palnning at Elementary Schools in Bantul Yogyakarta

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Abstract. This study aims to describe the implementation of school management in preparing budget planning at elementary schools in Bantul Yogyakarta. This research was conducted in qualitative research. Collecting data used observation, interviews, and documentation. Sources of data were obtained from the principal, teachers and school committee as research subjects. Data were analyzed by the Miles and Huberman model which included data collection, data reduction, data presentation and conclusion drawing. Checking the validity of the data used triangulation of sources and triangulation of techniques. The obtained results indicate that the implementation of school management in the planning dimension, schools in planning school needs has been adjusted to the capability of school, it has been stated in school programs based on priority needs through school work plans and school activity plans and budgets. In the organizational dimension, schools have created a budget drafting team that has been adjusted to their capabilities. In the actuating dimension, schools have involved school principals, teachers, parents, and school committees in budgeting. Then in the controlling dimension, the school optimizes the role of the school committee as a provider of consideration, supporter, controller and mediator.

041

Development of Integrated Online Learning Content Distribution Module Based on Social Media for Beginners Online Teachers in Creating Learning Content Due to The Covid-19 Pandemic

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Abstarct. The Covid-19 pandemic has brought many changes in the field of education, not only is education becoming a distance away but the need for teaching for teachers or lecturers has increased. The habit of teaching directly in the classroom changed by having to create learning content and dealing with social media to distribute the content. Instead of modernizing education, many are confused and only teach by giving a sign that there is an adequate explanation of the material. Guidelines that are easy to use even for teachers or lecturers who are lay and fast so that the ongoing Covid-19 pandemic is balanced with learning that also continues. The guideline contains procedures for using the *screencast O-Matic* application and *AZ screen recorder* then using *YouTube* media to post content and *WhatsApp* as a communication medium. This study uses the ADDIE type development research method with the validity testing phase of experts and testing 32 teachers to determine the feasibility and effectiveness of the learning system guidelines. The results showed that the quality of the content was 81.8%, 83.3% showed easy language to understand, 80% showed interest in using illustrations, 76.7% showed easy interaction on WhatsApp, 70% showed clear task instructions, and 70% showed the system is easy to access.

042

Improving Beginning Reading Ability By Using Macromedia Flash Application Media in SD. Klopo Sawit, Bangun Kerto Sleman

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Abstract

The learning process can run smoothly if students can understand what is being learned. The main need for the early childhood learning process is reading skills. Reading ability is a part of written language ability which is better known as receptive ability, where a student will get many things about knowledge, information, new experiences that he has never had before. Observation results in SD. Klopo Sawit, Bangun Kerto Sleman learning methods and the use of learning media are not quite right, so students are still having difficulty reading and are lazy to learn.The purpose of this research is to help students become skilled in reading. The research method uses classroom action and uses an Android-based application without spelling. This application combines play and learning activities with research subjects class 1 and 2 with the number of correspondents 48 students. Likert scale quisener test before use was first tested on 15 students randomly, with the results of validity for 22 question items > rtable value 0.514 with $\alpha = 5\%$ and reliability obtained 0.856 > rtable (0.514) so that it can be concluded that the variable is valid and reliable. The results of the T-test before and after using an android-based application with variable questions memorizing letters, visual learning styles, reading skills, and reading comprehension obtained a significance value (2-tailed) of 0,000 ($p < 0.05$). These results indicate that the method of learning to read without spelling using an Android-based application is very influential in learning to begin with reading. The output of this research is application, publication an article of ISBN scientific journals, and additional output in the form of recording intellectual property rights.

Keywords**: early age, receptive, spelling, beginning reading, android**

043

The Innovation of Nation Character Education Based on Historical Values of the Struggle of Pangeran Sambernyowo in the Era of Society 5. 0

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Abstract. Essential and cultural education in essence aims to develop cultural values that become the identity of the character of society and nation. These essential values can be developed in various ways such as strengthening the values of national character. Through the materials in it, the community can be taught to solve the problems in the context of national character building. In the context of education, these values of national character become the fundamental values for community in their socialization and interaction. This article aims to analyze the historical values of the struggle of Prince Sambernyowo which can be developed into a model of the nation's character education model in the 5.0 era. In the digital and virtual era at this time the development model of national character education is very vital especially for the process of inheritance cultural character values for the youth both millennials and Z generation who are vulnerable to socio-national crises. Besides, this article also provides strategic and innovative steps regarding the process of developing national character values from cognitive to affective to students.

Keywords: Education, Nation's Characters, Historical Values, Struggle, Pangeran Sambernyowo, Society of 5. 0

044

Improvement Of Social Manufacturing Data Performance On Industry 4.0 Era

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Abstract. The Revolutionary Era 4.0 made it necessary for every company to pay attention to the value of performance responsibly which included several aspects of technology use with social manufacturing, profit, planet, and people with the triple bottom line concept. PROPER performance appraisal with the title Gold, Green, and Blue as the standard for companies that have carried out environmental care programs is a serious concern for companies to be included in that category.

This study tested 10 mining companies listed on the IDX and listed in PROPER from 2013-2019 with a total of 70 observations. Data analysis using Multinomial Logistic Regression. This study adds to the social evidence that manufacturing can improve PROPER performance, as well as the triple bottom line concept on the environment (planet), which can improve PROPER performance.

Keywords: Social Manufacturing, TBL, and Proper

045
Adoption of innovations online tutoring apps on high school students

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Abstract. This study aimed to discover the adoption of innovations online tutoring apps on high school students. This study used the diffusion theory of innovation with an innovation-decision process model approach with indicators of knowledge, persuasion, decision, implementation, and confirmation. The research was conducted in Pekanbaru City, Riau Province, Indonesia. Data collection used a survey method on 120 respondents from state and private senior high school students representing public schools, vocational schools, and religious schools. This study found that most of the respondents were users of online tutoring apps (71%). The decision of adoption has gone through the stages of knowledge, persuasion, decision, implementation, till confirmation, with a moderate to high score average. The score of using online tutoring apps to support learning activities and support achievement was relatively high. At the confirmation stage, the score of the desire to continue adopting the online tutoring apps was high (71%), it indicated that most of them will continue to adopt online tutoring apps. These findings illustrated that high school students are adopters of online tutoring apps innovation. As a post-millennial generation, they are an important generation for realizing Society 5.0 in Indonesia.

Keywords: Adoption of Innovation, Online Tutoring Apps, High School Students

046
Social Engineering Of Hazard Control In Medical Waste Management Workers

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Abstract:

Disease transmission is a serious occupational health hazard in the hospital setting. Information through blood, droplets, and other body fluids is dangerous from infections caused by viruses and bacteria. Medical waste management workers are among the workers who have the largest ratio of being infected with various diseases from medical waste from hospital patients. This paper aims to design a risk control for the potential hazards of disease transmission in medical waste management workers. This paper uses a hierarchical threat controlling method by combining social engineering. It is hoped that this paper can stimulate the strict application of the hazard control hierarchy and the implementation of universal health protocols in hospitals. So that occupational diseases can be passed down or eliminated from the workers.

Keywords: hierarchy of hazard controllers, medical waste workers, social engineering

047

Effect Of E Booklet Media About Obesity Prevention On Knowledge Levels In Junior High School Students In Yogyakarta

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ABSTRACT

Obese adolescents in the world continue to increase from year to year. In the Special Region of Yogyakarta (DIY), there are 8% of adolescents aged 13–15 years who are obese. Prevention of increasing obesity in school-age children in DIY needs to be done because Yogyakarta City is a district that has the highest prevalence of obesity in DIY. Awareness of health care behaviour can be created by providing health education to prevent an increase in obesity in adolescents. This study aims to determine the effect of e booklet health education on knowledge. This research is quasi-experimental research by measuring the pre and post-test scores. This research was given health education through e booklet media. Knowledge data obtained from the pre and post-test questionnaires. There are differences in knowledge before and after health education ($p < 0.05$). Health education on obesity prevention through e booklet media influences knowledge.

Keywords: Obesity, E booklet, Knowledge, Health education

048

Response Of Soybean Growth In Sandy Coastal Soil To Seaweed Compost And Biochar Application

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Abstract. The coastal area is sub-optimal land which is poor in nutrients. Therefore it is necessary to add organic matter to increase nutrients content. The research that has been conducted aims to determine the effect of seaweed compost and biochar application on soybean growth on sandy coastal soils. The research was arranged in a Completely Randomized Design consisting of two factors. The first factor was the dose of seaweed compost, namely 0, 20, 40, 60. The second factor was giving biochar, namely without biochar and giving biochar. The research data were analyzed using Analysis of Variance, if there was a significant difference, it was tested with the Duncans Multiple Range test at the 5% level. The results showed that the interaction between seaweed compost and biochar significantly increased the growth rate of plant height. Biochar significantly increased plant dry weight and pod number. Seaweed compost only significantly increased root dry weight. The number of nodules, root length, and harvest index were not affected by seaweed compost and biochar.

049
Contributing Factors to the Implementation of Guidance Process at Kesatuan Bangsa Bilingual Boarding School

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ABSTRACT

This research aims to discover 1) The implementation of guidance process at Kesatuan Bangsa School (KBS); 2) Parents' involvement in guidance process at schools; 3) Supporting factors to the guidance process at Schools.
The result of the research indicates that 1) The implementation of guidance process in Kesatuan Bangsa Bilingual Boarding School (KBS) is performed by teachers/homeroom teachers coordinated with guidance counselor by taking account students' developmental stages and managing direct collaboration with parents; 2) Parents' involvement in the implementation of guidance in Kesatuan Bangsa Bilingual Boarding School (KBS) is direct or indirect. Parents always communicate with school regarding guidance session or counseling class and other activities; 3) Supporting factors for the involvement of parents in guidance implementation at Kesatuan Bangsa Bilingual Boarding School (KBS) are school principal, guidance counselor and teacher/homeroom teacher. In addition to parents directly and indirectly involved in the implementation of the guidance, the three parties always support the guidance conducted at school.

Keywords: parents' involvement, guidance implementation

051

Black Box Testing on ukmbantul.com Page with Boundary Value Analysis and Equivalence Partitioning Methods

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Abstract. One of the most important aspects in information system development is system testing. System testing aims to evaluate the capabilities of the application and determine whether the program developed is in accordance with the expected results. It also aims to ensure that the application is of the best quality and is maintained. In this study, system testing was conducted on ukmbantul.com application. ukmbantul.com is a website that is used to promote the potential of craftsmen / home-based businesses in Bantul. The testing is done by black box testing and all data input is tested with various data that are not in accordance with the rules. Black Box Testing is done by testing the application without seeing / knowing the internal structure of the code or program. The research was carried out using boundary value analysis and equivalence partitioning methods. The results show that the development of ukmbantul.com has considered the limitations in data entry. The form used for the data entry process has been validated in accordance with the applicable limitations. Keywords: Testing, ukmbantul.com, black box, boundaries

052
Unlocking digital literacy practices of EFL teachers

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Abstract. Digital literacy practice is necessary for education since information and communication technology has developed rapidly, resulting in shifting to the era of digital technology. The incorporation of digital literacy offers some benefits. The digital literacy practices in school and especially in classrooms are required for preparing 21st-century students. This study aims to (1) determine teachers' perceptions of digital literacy practices in the level of classroom and school, (2) point out the digital literacy practices of English Foreign Language (EFL) teachers, and (3) investigate the challenges faced by the EFL teachers in applying digital literacy practices in the classroom. This study revealed the digital literacy practices of thirteen EFL Teachers in Yogyakarta using questionnaires and semi-structured interviews. The results uncovered that at the school level, digital literacy was highly supported, evidenced by the facility, equipment, and the connectivity provided in all schools with a variety of free internet access. In the classroom level, these teachers practised digital literacy by using some digital tools. They have specific purposes in selecting digital tools. In implementing digital literacy, the teachers faced some challenges, such as defective equipment and Internet access and intrinsic factors such as teachers' knowledge in technology, their attitudes toward digital technology, and students' commitment to apply digital literacy. These findings are followed by recommendations for schools, teachers, and further research.

053

RDBMS and Google Maps Integration Model for WebGIS Based Land Ownerships Data Visualization

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Abstract. . Map-based visualization of land ownership data is much needed by policymakers, both in government and private institutions. The utilization of this data is primarily to support macro planning, policy-making, and good governance. On the other hand, there are currently many application systems available which are the RDBMS database. This research examines the proposed RDBMS integration model and Google Maps maps to visualize land ownership data in a dynamic map view. The prototyping method is applied in this study to show how the available RDBMS can be improved to visualize land ownership data in a WebGIS-based application. The proposed model is tested using an application prototype. Technically the model can be implemented without significant constraints, but the actual implementation still faces obstacles, especially related to policies related to the cross-sectoral utilization of population databases and the obligation to maintain data confidentiality.

054

The Model Prototype of WebGIS-based for Organizational Asset Management

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Abstract. Large organizations generally have assets distributed over separate locations. The problem is, decisions or policies will be easier to make if they are supported by a system that can dynamically visualize the existence of every asset owned by the organization. The WebGIS-based asset management approach is an alternative solution to this problem. This study examines a proposed WebGIS-based organizational asset management model. An application prototype was developed to test the proposed model using PHP, JavaScript, HTML, and CSS software. The Google Maps API is also used to create a base map. On the back end, authorized users can control and perform input, edit, and delete asset data. On the front end, public users can access public information. The test results of the developed prototype can provide various information on organizational assets visually based on digital maps that suit the needs of its users. The developed prototype still needs to be tested further, especially concerning security aspects, browser compatibility, and display design suitability.

055

The study of addition variety of vegetable flour on physical characteristics of tortilla chips

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Abstract. Tortilla chips are a snack product made from corn. Tortilla chips generally have a bright yellow color with a crispy texture. Variations in the manufacturing process are needed so that the resulting tortillas have more attractive colors and better textures. The purpose of this study was to determine the effect of the substitution of cornflour with various variations of vegetable flour on the appearance of the color and texture of tortillas. This study uses a completely randomized design (CRD) with two factors and two replications of the analysis. The first factor is the type of vegetable flour, red spinach flour, beets, green spinach, and celery. The second factor was the concentration of vegetable flour substituted in making tortilla chips, namely 10%, 25%, and 50%. The analysis used was the Hunter Hutching method color test and texture test using the Universal Testing Machine (UTM). The results showed that the highest L value of the color test was in the control tortilla of 46.74. The addition of vegetable flour decreases the amount of L or brightness, where vegetable flour has a color pigment that makes tortillas reduce brightness. The value of a color chormatic of red spinach tortilla and beets have a higher value than the control tortilla, green spinach, and celery, which shows that the red spinach and beet tortillas have bright red pigment. The control tortilla b has the highest value followed by green spinach and celery tortillas. The tortilla chips texture test can be seen from the amount of the Fbreak. The lowest Fbreak value found in red beet tortillas is 1.83, which shows that the beetroot tortilla has the most crispy texture compared to other vegetable tortillas and control. The higher concentration of vegetables flour added, the higher the Fbreak value indicates the harder the tortilla texture.

056

Analysis of the Wood Production Machine Process for the Application of Wayang Klitik Technology

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Abstract. A review of basic research on wood commodities in the making of wayang *klitik* aims to analyze the characteristics of the flat material and characterization characters. The production process applies wood shaved and splits machine technology. The research stages used a study of the needs of craftsman, designing machine prototypes, product testing, and production implementation. The results of this research are to use the rubber roller against the shaved machine in the left position and split the wood in the right position. The machine's production capacity has a power of 6.5 meters/minute. Engine technology is driven by a 1 Phase 220VAC 2500 RPM 0.5 KW electric motor with chain transmission, gear, pulley, and v belt. The quality of the pieces of wood produces a length of 80-100 cm and a width of 5 cm with a quantity of 5 pieces/minute of wood that is ready for use. This review of findings has identified the creative industry product design from previous research. The follow-up to these results is possible as other economies, education, culture research.

Keywords: wood machine, wayang klitik, split, shaved

057

A Study On Awareness Of Bibliographic Management Software For The Academic Writing Activity In Higher Education

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Abstract.
Academic writing has become a necessary activity in the higher education institution (HEI). Although various supporting academic writing tools are widely available, they are not fully utilized by the HEI's academic community. The purpose of this study is to present the current understanding of the awareness, perceptions, and preferences of the academic community at HEI on the use of a Bibliographic Management Software (BMS). The approach used in this study is a quantitative analysis using a questionnaire. A total of 144 academic community from various HEI in Indonesia were involved in this research. This study's findings indicate that the awareness of the academic community in Indonesia regarding BMS is still low. Their ignorance of the existence of BMS affects their awareness of the use of BMS. However, most of the academic community showed a preference to continue using BMS when they found the benefit of using BMS. This study can be useful for HEI management to promote BMS to their academic community and for BMS service providers to increase promotion and service satisfaction.

058

Student Awareness of Digital Payment Services (Case Study in Indonesia)

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Abstract.
The industrial revolution 4.0 increases the level of awareness of various groups of people in using digital payment services. This study investigates the student awareness of digital payment services in the higher education level in Indonesia. The main contribution of this research is to provide evidence about the relationship between demographic variables and the level of awareness of digital payment services among students in Indonesia. This study is based on a sample of 104 students from various higher education institutions in Indonesia. The results of this study concluded that there was no significant difference between Indonesia student demographics and the level of awareness of digital payment services. The findings of this study will be useful for digital payment service providers in providing an initial understanding of student awareness of digital payment services in Indonesia.

059

Pitutur Ki Hajar Dewantara as Character Education Media Based Javanese Ethnopedagogy

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Abstract. Character education is a process of character building in individuals. This study aims to analyze the characteristics of Ki Hajar Dewantara as a medium for character education based on Javanese ethnopedagogy for junior high school students. The data collection method uses qualitative ethnographic methods. A total of 25 students were given treatment through the process of socializing and internalizing the meaning of Ki Hajar Dewantara's meaning including *Ing Ngarsa Sung Tuladha, Ing Madya Mangun Karsa, Tut Wuri Handayani* for 3 months at SMP N 1 Pageruyung Kendal. Various kinds of activities are carried out in the internalization and outreach process involving various parties, namely students, teachers, parents, and the community. The results showed that there were changes in the character of students, especially the characters of religiosity, honesty, discipline, love for the country, caring for the environment, caring for social and responsibility. Changes in student character indicate that Ki Hajar Dewantara's features are effective as a medium for character education based on Javanese ethnopedagogy for junior high school students.

060

A Web Based E-Archives Information System Design in Universitas PGRI Yogyakarta

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Abstract. Overloaded space and the inefficiency of document finding are the weakness of the academic archive system in Universitas PGRI Yogyakarta (UPY). Drawing upon the background, this study attempts to design an academic e-archive information system in UPY. This study aims to generate a digital archive information system using Microsoft Solution Framework (MSF) with Oriented Development (OOD) approach assisted by UML (Unified Modeling Language) tools. The Web-based e-archive designed at UPY provides convenience and security in terms of academic document storage as well as the efficiency of data searching.

Keywords: e-archive, MSF, UML, OOD

061
Effect of Project Based Learning Model Application Against Student Achievement

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Abstract: *The purpose of this study was to determine the effect of using the Project Based Learning model on learning achievement of Pancasila and Citizenship Education in Junior High Schools. This research method is a quantitative experimental research (quasi-experimental design) with a pretest-posttest control group design research design with a quasi-experimental approach which refers to classes that have previously been formed either as a control group or an experimental group. group, by examining 68 students. The research stage consists of planning, implementing, processing. The translation analysis uses a quasi-experimental design or a quasi-experimental approach. The results showed that the use of the Project Based Learning model in teaching Pancasila and Citizenship Education had an effect on the learning achievement of Pancasila and Citizenship Education in Junior High Schools. This is indicated by tcount> table (8,196> 1,997) or p-value less than 0.05 (p = 0,000 <0.05). The score in the experimental class with the Project Based Learning model is 20.29 in the medium effectiveness category. While the gain score for the control class using conventional learning models is 1.47 with low effectiveness category.*
Key Word: Learning Models, Education, Learning Methods.

062

Social Changes After Transmigration In South Sumatera Since 1990

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Abstract. This research focuses on social change in post-program transmigration society of Burna Mulya village, regency of East Ogan Komering Hilir, South Sumatra, Indonesia. It is a descriptive qualitative research using in-depth interviews to gain data. The results of the research show there are four aspects have been changed because of post-program transmigration society: economy, citizenship, infrastructure, and socio-religious. The supportive factors of social change are villages ploriferation, palm and rubber commodity growth, infrastructure development, and main road construction; while the inhibiting factors are land certificate issues, low level of society education, self-interest of each village, and land disputes. This research highly suggests the goverment gives special training equally to both transmigrants and native people to explore natural resources. The government also has to play the role of mediator to facilitate both parties so they can work together as a team to promote the economic growth of the region.

Keywords: social change, post-program transmigration, society, South Sumatra

063

Effects of Sucrose Addition to Lactic Acid Concentrations and Lactic Acid Bacteria Population of Butterfly Pea (*Clitoria ternatea* L.) Yogurt

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Abstract. Butterfly pea yogurt (BPY) is a result of processed milk with the addition of the extract of the butterfly pea (*Clitoria ternatea* L.) Through the fermentation process of Lactobacillus bulgaricus and Streptococcus thermophilus as a lactic acid bacteria. The butterfly pea (*Clitoria ternatea* L.) is a source of the anthocyanin and potentially a natural blue dye. The study aims to determine sucrose's influence on lactic acid production and lactic acid bacteria of butterfly pea yogurt. The research design uses a completely random design. The study uses four treatments is a P1: 0% sucrose addition, P2: 4% sucrose, P3: 8% sucrose, P4: 12% sucrose, and yogurt control without sucrose addition as a comparison. Data is analyzed using variance analysis. Results showed that the concentration of lactic acid yogurt control 1.06 ± 0.79, P1=1.18 ± 0.22, P2=1.55 ± 0.39, P3=1.85 ± 0.24 and P4=2.0 ± 0.31. Whereas lactic acid bacteria population of yogurt control are $3{,}1x10^{6}$±0.79, P1=$5.33x10^{6}$±0.97, P2=$7.60x10^{6}$±0.26, P3=$3.35x\ 10^{7}$±0.98 and P4=$2.86x10^{7}$±0.53. The results indicate that the addition of sucrose 12% increase the concentration of lactic acid and lactic acid bacteria population significantly ($p<0.05$) of butterfly pea (*Clitoria ternatea* L.) yogurt.

064

Social Media-Based Learning in Preparing Year-End Assessment Tests of English and Mathematics Subjects for Islamic Boarding School Students

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Abstract
Islamic boarding school (Pondok Pesantren) in Indonesia bargains the full-day school, both Islamic and exact studies. Still, in a particular case, they cannot organize it because of limited funds and human resources. This study aimed to present the practice of preparing the students (santri) in facing the year-end assessment of English and Mathematics subjects at the senior high school level by the expert tutors. It used a qualitative descriptive method and involved seventeen students (santri) from Islamic Boarding School (Pondok Pesantren) of Ajyaluna Al-Muhsin Indonesia, which observation and interview were the research instruments. It aimed to describe the process of research in preparing the students (santri) in facing year-end assessment through synchronous social media-based. The results showed that these media, which were Instagram live could be media for tutors to explain the tips, tricks and strategies to answer English and Mathematics examination in the year-end assessment and it can also promote the institution to the other formal schools. Therefore, the process of research in preparing year-end assessment of English and Mathematics subjects for Students at Pondok Pesantren Ajyaluna Al-Muhsin used Synchronous Social Media-Based Learning.

Keywords: *Social Media, Assessment Tests, English, Mathematics, Islamic School*

065
Media Information Technology Games Based On Local Cultural Content

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Abstract. This study aims to determine the effect of information technology game media on cultural content on learning motivation of Yogyakarta PGRI University students. This research was conducted because there were still some students who had low motivation to learn, because some lecturers were inconsistent in the use of information technology game media. This study uses quantitative methods with a student population with a sample of 74 students. This study uses questionnaire instrument data collection techniques to obtain data media games and information and learning motivation. The analysis technique used in this study is simple regression analysis. The results of this study concluded that there was a positive and significant influence between technology and media games based on local cultural content on the learning motivation of Civics Education students class of 2019/2020. The results obtained with a value of rxy 0800> rtable 0.227 which means that the information technology game media based on local cultural content can affect student motivation.

Technology, learning Media, Learning Motivation, Culture.

066
Webinar Technology-Based Science Article Writing Training

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Abstract. The purpose of this Community Service is to equip doctors in the field of writing scientific articles for promotion. The results of medical research in the form of research in the health environment can be used as a scientific article to be published in national and international journals. The method used in assisting the writing of scientific articles based on health research is by the direct practice of writing articles and their implementation submitted in journals. The method used in this research-based article writing assistance is by the direct practice of writing and its implementation in submitting articles to journals through Webinars. The results of this article writing assistance are felt to be very beneficial for doctors in the Bantul Health Service area, Yogyakarta. Through two days of training, doctors can write health research-based articles. Doctors can also easily be promoted when the articles are published in proceedings or scientific journals. Through this article training, it can increase the motivation of doctors in improving their functional positions and support better doctor interactions, so that the future hope is to improve the performance of doctors.

Scientific Articles, Webinars, National Journals, International Journals

067

Development Of High Order Thinking Skill High School Class Description

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Abstract. *High Order Thinking Skills* (HOTS) can improve the ability of mathematical literacy, not limited to the ability to count but also how to apply it in daily life to solve a problem, how to communicate it. The goal of developing HOTS questions is in the form of a description on the mathematics subjects of sma ipa grade X to facilitate the mathematical communication skills of students. This type of research development refers to Thiagarajan, Semmel and Semmel's development model of defining, designing, developing, and dissemination in developing quality mathematical learning assessment instruments. Instruments that have been compiled are then performed expert validation and empirical validation through field trials. Expert validation involves lecturers and math teachers, empirical validation is carried out with trials on students of SMA N 11 class X IPA. Data analysis techniques use qualitative analysis to define all expert inputs on instrument improvements compiled, and quantitative analysis to test the validity of grains and reliability of test instruments containing developed question items.

068

The Development of Drawing Storybook Learning Media to Improve Reading Interest of Class Iii Students in Primary School

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Abstract. This study aims to find out the steps in developing picture series book learning media, the feasibility of instructional media, the effectiveness of instructional media, and the attractiveness of instructional media. This research method was research and development. The development procedure in this study uses Borg & Gall steps, namely: Finding Potential and problems, Collecting data, Designing a product, Designing the validation, Designing the revision, Testing product, Revising product, Pilot testing the product, Revising product, Creating the mass production. The results of this study indicate the feasibility of the media in terms of the results of the assessment of the material and the results of the assessment of media experts' good criteria. Media is effective in increasing students' interest in reading as evidenced by the results of paired sample t-test on the questionnaire values before and after using the media, the Sig. (2-tailed) 0,000 <0.05. The value of t arithmetic (10.282) is greater than t table (2.060). The attractiveness of the media is seen from the results of the teacher's response and the results of the student responses questionnaire very interesting criteria.

Keywords: *Learning Media, Picture Series Books, Reading Interest*

069
Problem-Based Learning vs Student Teams Achievement Divisions Assessed from Student's Mathematics Problem Solving Ability

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Abstract. This research aims: (1) to find out the effect of the Problem Based Learning Model (2) to find out the effect of the Student Teams Achievement Divisions Model (3) and to find out the effectiveness between the Problem Based Learning Model and Student Teams Achievement Divisions Model to mathematical problem-solving skills of third-grade students at SD N Mejing 2. This research did in SD N Mejing 2. This type of research is a Quasi Experiment with a research design Pretest-Posttest Only Control Design. The population of this research are all students in SD N Mejing 2. The instruments used in this research are problem-solving skills test and observation of learning activities. Data analysis in this research used t-test with a significant level of 5%. The final results of this research show that: (1) There is an influence between students' problem-solving skills before and after the Problem Based Learning model applied. The results of the analysis are t count = -10,081 ≤ t table = -1,703; (2) There is an influence between students' problem-solving skills before and after the Student Teams Achievement Divisions learning model applied. The results of the analysis are t count = -5,403 ≤ t table = -1,703; (3) Learning with Problem Based Learning (PBL) more effective than Student Teams Achievement Divisions (STAD) against students' mathematical problem-solving skills, analyzed by t-test of two samples. The results of the analysis are t count = 2.970 ≥ t table = 1.674, the significance level of 5%.

070

Spherical K-means method to determine earthquake clusters

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Abstract. Spherical clustering is a grouping technique for spherical data. A vector data set is grouped into clusters where the distance used to group the vectors is the angle between the vectors. Earthquake events are directional data that can be analyzed in three-dimensional (spherical) form, because the epicenter of the earthquake spreads is very long and the time difference between events is different. Therefore, this study aims to determine earthquake clusters in Bengkulu Province and surrounding areas. The data used is data on earthquake events in Bengkulu Province and surrounding areas from 1970 to 2019, including latitude, longitude, magnitude, and depth, sourced from the USGS website. The analysis used in determining the earthquake clusters in Bengkulu Province is the Spherical K-means cluster analysis. The results showed that there were 6 earthquake clusters in Bengkulu Province and its surrondings. Most of the clustering results are in the sea.

Keywords: Spherical K-means, earthquake, cluster

071

Technical guidance to increase entrepreneurial capacity in feather duster SMEs, Karanglo village, Klaten Selatan district

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Abstract. Small and medium-sized enterprises (SMEs) which are currently starting to grow a lot along with simplified procedures for the advantages of these business groups. This small business group is one of the drivers of the economy in Indonesia, the rapid development of the SMEs will have a good impact on the Indonesian economy, so with proper and good management and entrepreneurship it will produce good SMEs performance as well. Therefore, it will be better if they can face the various challenges they would encounter in the future, one of several steps that can be decided is the use of knowledge in the management which can be implemented in the decision-making process in the businesses. The purposes of this community service of Management Department, University of PGRI Yogyakarta are to improve the quality of the products produced by the Karanglo Village SMEs in Klaten Selatan District They can implement the knowledge, especially in management fields related to entrepreneurship thoroughly. As we can inform earlier that these business group will have the potential to make a positive contribution to the Indonesian economy.

072

An alternative to a butterfly pea flowers and spices dip as a creative endeavour in the village of Bawuran

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Abstract. Bawuran Village is one of Pleret Subdistrict villages, Bantul Regency, where most of the residents' livelihoods are casual daily labourers and farm labourers/plantations. Therefore, it is necessary to have a creative business in the village of Bawuran that can support and improve citizens' economy. One of the innovative businesses that can be developed in Bawuran Village is the use of spices. And by adding butterfly pea flowers to this spiced drink can add nutritional value. With this dipped butterfly pea flower beverage production, it is expected to become an alternative creative effort in Bawuran Village.

073

PPT-Audio; The Alternative Audio-Visual Learning during the Corona Pandemic

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Abstract. The Corona outbreak has affected many sides of people's lives, including the learning process. Many students, teachers, and parents experience problems, both when the teacher explains the learning material and when students understand the subject matter well. Therefore, this study explains the use of PPT-Audio in learning process during the corona pandemic. It used a qualitative design with semi-participatory observation and interviews via *WhatsApp* (group) from May-July 2020. The reference review is also carried out on concepts, studies, and the conditions of audio-visual learning. The results are: (1) learning process during the corona pandemic experienced many obstacles: the explaining process by teachers, the understanding process by students, and the mentoring process by parents. In general, the learning process only takes the form of giving assignments by the teachers. (2) The use of PPT (audio) is very helpful for the teacher while explaining the subject matter and students with their parents while watching and listening to the teacher's explanation. In addition, this media can foster the imagination, creativity, and motivation of students while learning. (3) PPT-audio becomes an offering alternative media of attractive learning that can foster the imagination, creativity, and motivation of students while learning, especially accompanied by interesting pictures and narration.

Keywords: Audio-visual learning, PPT-Audio, Corona Pandemic

074

Analysis Of The Effect Of A Catalyst Hydrocarbon Crack System Spiral Pipe Against The 4-Stroke Motorcycle Engine Power

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Abstract. Engine power is produced through the change of energy from the chemical energy of the fuel by the combustion process into mechanical energy in the piston. This study aims to determine the effect of dual catalyst pipes using a hydrocarbon crack system on engine power. The design of this study used an experimental research design; the initial stage of this experimental study was by making a specimen that is a double catalyst with a spiral pipe on a hydrocarbon crack system. Retrieval of data starts from 1500rpm to 6500rpm engine speed with a lap difference in each test of 500rpm—data analysis techniques using numbers from research. They were testing the engine power of the motorcycle using the dyno test. The research data between standard machine testing results with the results of engine testing using a hydrocarbon crack system. Increased engine power occurs in HCS with a double catalyst and uses two fuel tubes. Vehicle power increased with the highest percentage by using one fuel tube that occurs at 5500rpm rotation, with an increase of 34.45%, i.e., obtained power of 6.73. Simultaneously, the use of 2 fuel tubes increased by 57.2% at 4500rpm with a power of 5.76.

075
Markov Regime Switching-Garch Modeling On World Oil Prices

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ABSTRACT
This study aims to explain and test the performance of the best forecasting model for world oil prices. The world oil price is included in a time-series data type that has high volatility and different variants at each point in time. Precise and precise time-series modeling of this type of data is required to properly explain structural changes and explain any shift in volatility. The method that is applied and produces the best model in describing world oil prices is the Markov Regime Switching-GARCH. Modeling results can be used as alternative data for investor's consideration for determining their investment decisions.
Keyword: Modeling, Oil, Markov Regime-Switching

076

Mathematics Teachers' Perceptions of Using the Internet for Online Learning

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Abstract. At this time internet technology is very advanced. The implementation of internet technology in education is used for online learning amid the pandemic Covid-19. This study aims to determine the mapping and teacher reasons regarding the use of the Internet in online mathematics learning. Retrieval of research data through a questionnaire Google Form. Interviews with mathematics teachers at junior and senior high school levels in Yogyakarta as many as 34 respondents. The results of the study were mapped based on gender, high school / junior high school units and equivalent, 0-10 years of teaching and 21-30 years. Shows the same result, namely the use of the Internet for learning mathematics as an addition and a complement. Meanwhile, the results of teacher perceptions based on a junior high school level and teaching length of 11-20 years are only as an addition. The teacher's reason can be concluded that the source of learning can be from anywhere, and the Internet is one of the additional learning resources for students, but to use the Internet must be supervised. The Internet can also complement mathematics learning by utilizing existing applications, but online mathematics learning cannot be equated with direct learning. Mathematics learning cannot be done entirely using online learning because interaction and delivery of material to students is limited and not optimal. Still, because of this pandemic, online learning for learning mathematics is needed.

077

Effectiveness of the Media learning Islamic Education-based Sparkol Videoscribe

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Abstract. Thinking about the status of elementary school children is a concrete operation. At this stage, the child is very interested in the things that draw attention to audio-visual. On the subject of Islamic religious Education (PAI), most of the material is abstract, with the help of learning media to make it easier for students to understand the material. In this study used audio-visual learning media by utilizing the Sparkol videoscribe application. SeThedevelopment of information technology, Teachers are required to utilize technology in education. Through this Videoscribe app, teachers can easily operate it to create interesting and fun learning so that the student's learning motivation increases. The goal that is to be achieved from this research is 1) to know the application of media-based learning of Sparkle Videoscribe on the theme learning of angelic name and its function. This research is *field research* with the data collection techniques used in the study of documents, observations, interviews, and questionnaires.

Keyword: *Media Learning, Islamic Education-based, Sparkol VideoScribe*

078

Developing Student Worksheet for Learning Independence

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Abstract. One type of teaching material that can train students to find concepts from teaching materials is the Student Worksheet. This study aims to develop a valid, practical and effective Student Worksheet to facilitate the independent learning of students in the Integer Number System Material Number Theory course. This study uses the ADDIE development model which consists of five stages, namely Analysis, Design, Development, Implementation and Evaluation. The instrument used was an assessment questionnaire from material experts and teaching material experts to measure the practicality of the Student Worksheet and as a measure of the validity of the Student Worksheet and the independent learning questionnaire used to measure the effectiveness of the Student Worksheet. The research was conducted on Student Worksheet users, namely lecturers and students in the Integer Number System lesson in the Mathematics Education Study Program of the PGRI Yogyakarta University by filling out practical and independent questionnaires. From the results of the research data analysis, it is known that the Student Worksheet in the Integer Number System lesson developed meets the criteria of validity, practicality and effectiveness of student learning independence.

079
Internet of Things Design on Chili Plants

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Abstract. This study aims to develop system application in chili plants. Chili is a fruit commodity that cannot be released in daily needs. This plant is widely used to meet the need for vitamins and minerals necessary for growth and health. Many factors influence the development of plant cultivation, for example temperature, soil pH, humidity, the need for irradiation or light intensity used, and other factors. All of these are a combination that must be known in order to produce good chili plant growth. This study aims to produce a system design for monitoring the growth of chili plants based on the internet of things. The method used in this study uses a waterfall. The results of the study resulted in an IoT design on chili plants that is ready to be tested on a large scale.

080
Utilization of NON B3 Waste as Learning Media in Online Class During the Pandemic

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Abstract. *Covid-19 pandemic had a significant impact on many aspects of life, including in the world of education. Pandemic conditions make the learning process adapt to new conditions, one of which is changing the form of face-to-face learning into online learning. The online learning process for teachers at Special School (SLB) faces challenges in delivering learning materials to students with special needs, especially in using appropriate learning media. This article discusses the training provided to special school teachers in Yogyakarta to make learning media utilizing non-B-3 waste as a support for the online learning process for children with special needs. The method used is a qualitative method with data collection techniques using interviews, observation, and performance evaluation. The results of this study indicate that the training in making learning media based on non-B-3 waste is significant in helping teachers solve online classroom learning problems for children with special needs. The reason for choosing non-B-3 waste for learning media are easy to get, and teachers can make media according to students abilities and learning objectives.*

Keywords: Learning Media, non-B-3 waste, online class, pandemic

081

The Role of Parents in Fostering a Culture of Family Literacy

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Abstract. The name of this activity is Mentoring Gerakan Literasi Keluarga (GLK)/Family Literacy Movement Era of the Industrial Revolution 4.0. This activity was carried out with the aim of providing space for discussion and assistance to parents in Sungapan V, Wahyuharjo, Lendah, Kulon Progo in implementing GLK. The method used in this service is the GLK implementation assistance. The assistance activities were carried out in the following stages: 1) introduction of community needs, 2) determination of assistants, 3) learning / knowledge transfer, 4) implementation, 5) consultation, 6) follow-up, and 7) evaluation. This service was conducted from March to July 2020. GLK assistance during the Covid-19 pandemic was carried out five times face-to-face in the network. The results achieved are 1) growing awareness of the importance of the family literacy movement, 2) habituating 15 minutes of reading non-learning books every day; 3) the provision of reading material for children, 4) the creation of a text-rich family environment by displaying books, pictures or information in one corner of the house.

082

Pl/Sql Design To Determine The Input Pattern Automatically In The Application To Predict The Number Of Customer Durian Fruit Needs

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Abstract. inventory of goods in business activities is an important component. One way to maintain the stability of the durian fruit stock is to estimate the number of durian fruit customers need. Predicting the number of customer durian fruit needs can be done by looking at the patterns formed from sales transactions. However, if the prediction is done manually, it will take a long time and is prone to errors. The solution to overcome this problem is that a tool is needed in the form of software in which there is already an accurate counting method. One method that can be used to calculate the customer's durian needs is the Adaline neural network. And the training data used is sales data of durian fruit. The training data is divided into 2 groups, namely input data and target data. The focus of this research is the design of pl / sql to determine the pattern of input data automatically for the application to predict the number of customer durian fruit needs. Types of pl/sql used in this research are procedure and function

083

Development of a Multirepresentation-Based Learning Model to Increase the Emotional Intelligence of 5 - 6 Years Old Children

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Abstract. This research aims to discover a learning model that can improve the emotional intelligence of children aged 5-6 years. The alternative taken to achieve this goal is by developing a pitutur luhur learning model based on multi-representation that focuses on the development of the emotional intelligence of children aged 5-6 years. The development of this learning model is based on the lack of learning models to improve children's emotional intelligence, especially those related to local culture. The research method used adopted the research and development procedure of Borg & Gall with the research stage; 1) preliminary study, 2) model development, 3) model validation and revision and 4) model implementation. Data needs for the model were obtained through questionnaires and group discussions. The questionnaire was filled out by 30 kindergarten teachers in Bantul Regency, Yogyakarta. Data collection techniques using questionnaires and emotional intelligence tests of children aged 5-6 years. Test the effectiveness of the model using the pretest-posttest control group design experimental method. The results of the research showed that The pitutur luhur learning model based on the multi representation could improve the emotional intelligence of children aged 5-6 years.

Keywords: *learning model of pitutur luhur, emotional intelligence, multi-representation*

084

Training of Frozen Cassava (Manihot esculenta) Processing to Increase Selling Value

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Abstract. Frozen cassava is one of the food innovations of cassava based. The long shelf life of frozen cassava can increase its selling value so that it can be used as a typical souvenir at Sosok Peak. The priority problem to be resolved is the lack of knowledge about the processing of cassava products so that the product is marketable and as an alternative for souvenirs. Following up on the results of the problem identification, the activity carried out was training on the process of making frozen cassava. The covid-19 pandemic activities were carried out online, through webinars, tutorials accessed through https://youtu.be/EQeePrurIEY and training modules distributed to partners. The output of this service was in the form of knowledge and skills of the women of the P2WKSS group of Sanan hamlet, Bawuran village regarding frozen cassava; new business of the P2WKSS hamlet of Sanan; frozen cassava production process video; learning module.

085

Community Based Tourism Model As An Effort To Develop Gilangharjo Village Into A Tourism Village

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Abstract

This research was conducted in Gilangharjo Village, Pandak District, Bantul Regency, DIY. This village is a potential area to become a historical tourism village because it is surrounded by some historical sites. Some of the sites in the area are Lipuro Selo Gilang site, Plangoh Sendang site, Migrant Rock site, Gunung Cilik Site, Tambalan Tomb and Sentono Tomb which preserved in order to make it a historical tourism area. The study is a descriptive qualitative research which was conducted through four stages. It includes observation, interview, data analysis, and research report. The data collection techniques included interviews, documentation, and recording. The length of data collection is 6 months from January to July 2020. The literature study is taken to support the research. The results of this study are a model or design of a village based tourism that can be applied in the village of Gilangharjo through several ways of enhancing the human and natural resources there.

086

The Impact of Budgeting Participation, Public Accountability, Internal Control Systems, and village Financial Systems (SISKEUDES) on village Managerial Performance

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ABSTRACT

This study aims to obtain empirical evidence from the participation of budgeting, public accountability, internal control systems, and village financial systems on the managerial performance of the village apparatus of Gunung Kidul district. The selection of research respondents use a purposive sampling method. The population of research as element within the government in 144 village Gunung kidul district. There was 80 respondents who completed the questions of chief village, village secretary, head of the people's representative body, and section head. The data processing is performed using multiple linear regression analyses. The results of the study revealed that participation in budgeting and internal control system did not have a positive effect on managerial performance while public accountability and village financial systems had a positive effect on managerial performance.

Keywords : budget participation; public accountability; internal control system; village financial system; and managerial performance.

087

Teaching Material Based on Indegeneous System with Journalism Approach as a Model of Thematic-Integrated Learning for Student in Primary School

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Abstract. Elementary school age students are included in the concrete operational stage, so they need concrete objects to understand about learning material. In this case, the teacher has a very important role in recognizing their characteristics in order to facilitate learning. Learning in accordance with elementary school students is an integrative thematic learning model. The thematic integrative learning model is one of the integrated learning models that integrates competences and skills from several fields of study which are packaged into one theme. One manifestation of optimizing the integrative thematic learning model is packaging teaching materials based on local traditions with a journalistic approach. The journalism approach intended in the preparation of this teaching material is to package interesting teaching materials to read and still lightly use in learning. The choice of journalism approach in the preparation of teaching materials is because the value of journalism will be increasingly important with the use of information technology which is increasingly communicative, then the integration of local wisdom values is intended to facilitate students in achieving applicable learning. Local wisdom is very important considering the learning process that occurs in the classroom, especially elementary school students, should start with the closest world or what students often encounter. The values of local wisdom will help students understand every concept in the material so that the knowledge obtained by students is not only limited to knowledge, but can also be implemented by students in the form of practice outside of school.

088

Forecasting LQ45 Shares Using ARIMA Method aim the COVID-19 Pandemic in Indonesia

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Abstract. The purpose of this study was to study Covid-19's thoughts on the LQ45 stock price. Stock price fluctuations by investors, where investor behaviour will also be influenced by external factors such as global economic developments. The pandemic caused by Covid-19 forced investors to wait and see. How much influence Covid-19 on the LQ-45 stock price is interesting to investigate.

This study relies on secondary data to analyze share price movements. Secondary data needed for analysis is the LQ-45 stock price daily data in January, February, and March 2020. The data was be analyzed with a quantitative approach, namely the Autoregressive Integrated Moving Average (ARIMA), to produce a three-month stock price forecast model. ARIMA has the advantage of being used as a method to obtain an estimation model by relying on the stock price data itself.

The results showed that the estimation model with ARIMA obtained the best model for IHSG LQ 45 was DLQ45 AR (2) d (1) MA (1) or ARIMA (2,1,1). This model supports it, adding to the LQ45 share price every day because of the Covid-19 period. If the Covid-19 pandemic emergency period is not ended in Indonesia and the world, there will be a threatening crisis in Indonesia.

Keywords : IHSG, LQ45, ARIMA, DLQ45

089

Geofencing Technology Implementation for Pet Tracer Based on Android Using Arduino

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Abstract. The risk of losing pets, especially pets without a leash, usually occurs because animals get lost or stolen by irresponsible people. If lost, the owner can look for himself in the nearest environment, ask questions from people around him, and make announcement posters at strategic places. Searching in this way takes a lot of time and effort and the pets you are looking for are not necessarily found immediately. So it is necessary to make an animal tracker in order to find out the location of the animal, one of which is by using a tracking device that utilizes the Global Positioning System (GPS).There is a problem regarding the frequent loss of pets, so animal tracking tools and applications are made that are able to notify inspectors about the presence of pets. By using GPS and the use of geofencing, it will help to know the position of the pet when it comes out of a predetermined geofence area. Geofencing is an innovative technology that utilizes real-world geographic coordinates by defining virtual boundaries or parameters. The implementation of geofencing technology has been successfully carried out in making pet tracking tools and applications using Android-based Arduino. The tools and applications created can help pet owners in monitoring their pets when their animals are lost or do not return home. The application can receive a notification when the pet is detected outside the geofence limit that has been set. The hardware used is the Arduino pro mini microcontroller, SIM800L GSM module, GPS UBLOX NEO 6.

090

Developing parking queue monitoring system using Wireless Sensor Network and RFID technology

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Abstract. Parking areas in urban centers are increasingly limited, but not in line with technological developments in addressing the problem of parking service needs in the urban public service center by implementing smart city technology. Many times the parking service waiting time is too long, due to a complicated procedure. Waiting time for services that are too long makes the parking queue increase in length, especially when registering for the end of a new parking lot. Besides, the storage of visitors' parking slip accumulation is still manual and not paperless. Therefore, in this study, a solution was proposed in the form of a system to accelerate administrative services for parking visitors by integrating Radio Frequency Identification (RFID) and Wireless Sensor Network (WSN) technologies. This system utilizes the database so that the results of data processing can be used by management to obtain visitor data information on parking online and quickly. The results obtained from this study are a prototype of a parking visitor monitoring system using WSN technology based on Zigbee and RFID protocols. Meanwhile, the results of visitor parking information presented in data processing can be used by management to find out statistical data relating to parking services.

091

Applying information and communication technology on learning model innovation of character education

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Abstract. This research aims to Character education material which with indoctrination method in formal institutions will not be able to build national character, because character implementation can only be built based on habits, spiritual and affective values. This study aims to design a Character Education learning model for IT-based Civics subjects to strengthen the character of junior high school students in the Special Region of Yogyakarta (DIY). The method that will be used is the study of literature, observation, in-depth interviews (in-depth interviews) and data analysis. The subjects in this study were 2 junior high school students in DIY, located in Bantul and Sleman districts, namely SMP Tridadi Sleman and SMP PGRI Kasihan. The research roadmap is made for 1 (one) year, which includes initial investigation, school mapping, analysis of mapping results, designing learning models, designing learning media up to implementation to junior high schools in DIY which are the subject of research, while data analysis techniques to be used are models integrated between quantitative and qualitative approaches.

092

The Development of Web-Based Correspondence Information Systems in University

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Abstract. Correspondence management at Universitas PGRI Yogyakarta (UPY) is still managed manually. When a student needs a letter from UPY, he or she must come directly to the Faculty admin. Students are required to write down the type of letter needed and their personal data. After that the letter will be signed by the dean of the faculty. This process takes a long time, especially when the faculty dean has a busy agenda or is not in place. This article will propose a web-based Information System for PGRI Yogyakarta University that can be used to store and manage data in the form of correspondence information needed by students. With this system students can apply for the letters they need from UPY anywhere. Information system that has been implemented can be seen that the system can manage student correspondence online. The time needed in the correspondence process by students has become faster when done by the system. Correspondence reporting can also be done automatically by the system.

Key words: correspondence, information systems, mobile webStart your abstract here…

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Prediction of Banking Stock Prices Using Naïve Bayes Method

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Abstract. Bank Rakyat Indonesia (BRI) is one of the largest state-owned banks in Indonesia. It has prompted both local and foreign investors to buy shares in the largest bank in the country. Reading stock price trends is very important for investors to buy or sell the shares they own. The method usually used by investors is fundamental analysis and technical analysis. Analysis by reading financial reports is quite complicated and requires high accuracy. Besides that, it takes much time because of the large amount of data available. A banking stock price prediction can be a solution to make it easier for investors to read stock price movements. In this study, the authors will design a web-based system to predict banking stock prices using the Naïve Bayes method. This system can provide investors with ease and effectiveness in reading stock price movements.

Keywords: *stock prediction system, naïve Bayes method, web-based*

094

The Use of Augmented Reality to Build *Occupational Health and Safety* (OHS) Learning Media

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Abstract. Occupation Health and Safety (OHS) has a purpose to ensure a safe and healthy work environment. Occupation health and safety must be apllied by an industry that have potential hazards arising from the production process carried out. The potential hazards include work accident such as explosion, fire, pollution, and disease

The technological development brought us to the next level of invention. One of the invention that found in 21st century is Augmented Reality. Augmented Reality is an revolutionaty invention which combines virtual object into reality environment. Augmented Reality widely use as a learning media, promotional tools, and for some special purpose. Augmented Reality can be use in desktop, mobile device, and wearable technology.

The purpose of this research is to build Occupational Health and Safety learning media based on Augmented Reality. The learning media will be made mobile based with android devices. The method of software development using the waterfall method. The output of this research is marker card that can display objects in the form of images about Occupation Health and Safety. Images will reveal if card scanned using android mobile device that has the Augmented Reality application installed.

095

Awareness Implementation Of The Prevention Of Health Protection Of Covid-19

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Abstract. The spread of the Covid-19 virus continues to increase, so it is necessary to take preventive measures through increasing public awareness of the implementation of the COVID-19 prevention health protocol. Raising awareness can be done through socialization starting from the dangers of civid-19 and implementing standards for the prevention of covid-19 health protocols. The method used can be through the lecture method through online meetings. the media that can be used are the material of the dangers of covid-19, and the health protocol for the prevention of covid-19 according to the standards of the Ministry of Health of the Republic of Indonesia. evaluation is carried out by providing a questionnaire before and after socialization activities. The results of the socialization show a significance of 0.000, which is less than the significance level (a) of 0.05. These results mean that there is a significant difference between awareness of the dangers of covid-19 and health protocol care behavior before and after socialization. The t table shows that the t count is negative, namely 7.844, which means that the average before was lower than after the socialization was carried out.

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OpenCV and Machine Learning Implementation for the Vehicles Classification and Calculation in the Parking Tax Monitoring System at the Bantul Regency Regional Financial and Asset Agency (BKAD)

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Abstract. After regional autonomy has been implemented in Indonesia, local governments must maximize its revenue through various sectors, including the Bantul Regency government. One source of regional income is a local tax, based on law no 28 of 2009, one type of tax-managed by local government is the parking tax. Parking tax is a tax on some of the parking business operations. Either an off-street parking lots, those provided in connection with the business principal, those provided as a business, or the provision of motor vehicle daycare (Indonesian Law No.28 of 2009). The parking tax is a self-assessment tax. Taxpayers will calculate their amount of tax that must be paid to the government. Therefore, the local government should conduct oversight of the reports of taxpayers. One form of supervision carried out is to monitor the number of vehicles at the taxpayer's location. Officers then record the number of vehicles based on vehicle classification, whether they were two-wheeled or four-wheeled vehicles or other vehicle types. Currently, monitoring is done manually using a mechanical counter. This monitoring may have the risk of being miscalculated or wrongly recorded due to the monitoring officer's oversight. Information technology, such as computer vision (OpenCV library) and machine learning (Mask R-CNN), is expected to minimize these errors and optimize the officers' performance on duty.

097

Application of Data Mining Using the K-Means Algorithm in Rural and Urban Land and Building Tax (PBB-P2) Receivables Data in Bantul Regency

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Abstract. The land and building tax (PBB-P2) receivable amount in Bantul is quite large. As of December 31, 2019, there were 3,344,145 PBB-P2 objects, worth for IDR 114,984,991,600. This number tends to increase from year to year, showing that the PBB-P2 collection process hasn't optimal. One of the problems related is the receivable data management has not optimal. The receivable data is managed by the Regional Financial and Asset Agency of Bantul Regency (BKAD Bantul). These data are currently stored in the Microsoft Excel application and have not been used for analysis. This study discusses data mining applications for data management using the K-Means clustering method. This paper uses the PBB-P2 existing receivable data, given by the Directorate General of Taxation before PBB-P2 becomes local taxes. The data is between the years of 1994 and 2012. Data is grouped based on the village area and the category of the receivables number. We cluster it into three types, namely the high, medium, and low accounts receivable clusters. We use the receivables count and amount as variables. Data mining is a tool for converting data into information. Data mining is expected to improve the PBB-P2 receivable data management in the Bantul Regency to make better decision-making. This study's results make it easier to analyze the PBB-P2 receivable data pattern based on the grouping of village areas and the receivable number category. The analysis results are expected to provide input for BKAD Bantul to identify certain villages and categories of receivables that need more attention in the PBB-P2 collecting process in the Bantul Regency.

Keyword: Data Mining, K-Means, Clustering, Local tax, Land and Building Tax (PBB-P2), receivable

098

The Influence of Gurney Flap to the Stability of Formula Car Rear Wing with Simulation

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Abstract
The rear wing on a vehicle, especially racing car, is used to maintain the stability of the vehicle when driving at high speed. However, in reality when a racing car is running at high speed it does not function optimally because of the maximum limit of compressive force generated. Therefore modifications of rear wing areneeded in order to increase the compressive force. The common modification is varying the number and shape of the spoilers or change the angle of the AoA. This study used a single spoiler variation with the addition of Gurney Flap attached to the rear wing spoiler. The addition of gurney flap was expected to improve the aerodynamic performance, resulting the greater downforce. This study was conducted with a simulation using the 2018 student version of Solidwork software. The variations applied were rear wings using gurney flap and without gurney flap at speeds of 25 m/sec, 50 m/sec and 88.89 m/sec. The results of the variation of gurney flap addition on the rear wing produced a greater variety of downforce based on the value of the resulting lift coefficient. As speed increased, the pressure and the coefficient of the lift also increased. The effect were the greater the compressive force so as the stability was increased.

Keyword: *rear wing, gurney flap, downforce*

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Subsurface Identification Campus I University Of PGRI Yogyakarta using The Microtremor Wave Method

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Abstarct. Campus I of PGRI Yogyakarta University is an area that the college is included in Bantul Regency, which is a basin area composed of thick volcanic deposits and an active seismic region. Thick layers of sediment can cause Prag damage to buildings in the event of an earthquake. The subsurface identification in the Campus I area of PGRI University Yogyakarta needs to be done because of the increase of new multi-story buildings in the PGRI Campus area. The identification analysis uses HVSR (Horizontal to Vertical Spectral Ratio) so that the thickness of the sedimentary layer could show in the study area. The magnitude of the dominant frequency value was measured by the microtremor method somewhere illustrates the type of soil in the study area. Based on the results of data processing, it can show that the Campus I area of PGRI Yogyakarta University is composed of thick sedimentary layers with thicknesses ranging from 26.7 m - 59.3 m. Based on the distribution map, the most adhesive sediment layer is under the area of the Rectorate building and the Faculty of Business building. These results show the similarity to the Special Region of Yogyakarta, which is an area arranged in a basin with fill material in the form of volcanic deposits.

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Open Space Development Assistance at Rawa Kalibayem Tourism Area, Ngestiharjo Village, Kasihan, Bantul

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Abstract. *Bantul city has many areas with potential tourist attractions, one of which is Rawa Kalibayem Tourism area. The purpose of this activity is to identify and optimize the tourism potential found in Rawa Kalibayem Tourism area. This activity uses the PASOLP (Product Analysis Sequence for Outdoor Leisure Procedure) method, a modern tourism area planning approach that includes between national/regional policies, the environment and economic sectors related to planning. The results of this activity show there is still a lot of potential that can be unearthed in Rawa Rawa Kalibayem tourism area, among the potential of such tourism are culinary tourism (traditional food), educational tourism (history of the region), family tourism, and water tourism (fishing) and agrotourism. In addition to tourism there is also the utilization of Open Space and Play Room in the form of Child Friendly Room that can be processed to the maximum. The results of this activity show there is still a lot of potential that can be unearthed in Rawa Rawa Kalibayem tourism area, among the potential of such tourism are culinary tourism (traditional food), educational tourism (history of the region), family tourism, and water tourism (fishing) and agrotourism. In addition to tourism there is also the utilization of Open Space and Play Room in the form of Child Friendly Room that can be processed to the maximum. The potential and utilization can be developed to the maximum for its management and management. Therefore, it is necessary to help the plan of open space development of Rawa Kalibayem tourism area gradually and systematically and in accordance with the scale of priority. Assistance of development plan and implementation of open space Rawa Kalibayem area in the form of proposals and ideas that will be the basis of the implementation of the master plan of regional development. This master plan is structured and created based on a certain level of time in accordance with the scale of priorities so that in the future the development and development of Rawa Kalibayem tourism area is able to accommodate all the potential that exists.*
Key words : *tourist areas, tourism potential, open spaces, playrooms, master plans*

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Utilization of Information Technology in Improving Teacher's Performance

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Abstract. This study aims to determine the magnitude of the influence of school principal strengthening education and training on teacher performance, the magnitude of the influence of school climate on teacher performance, the magnitude of the influence of education and training to strengthen principals and school climate together on teacher performance at Public Elementary Schools in Winong District, Pati Regency. This study was designed using a quantitative approach and is a type of inferential research that proves the effect of education and strengthening training for principals and school climate on teacher performance that has been formulated in the hypothesis. It is expected that researchers will be able to determine the significance level of the independent variables against the bound variables used in the study.

The data used to analyze behaviors related to school principal strengthening education and training, school climate, and teacher performance were obtained through the data collection method by taking a sample from a population and using a questionnaire as a data collection tool. The questionnaire used is in accordance with the grid and the research variable indicators.

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Planting Self-Confident Characters Assisted By Technology And Science Through Reading Activities

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Abstract. The purpose of this research is describing the implementation of reading activity in SD 2 Garung Kidul, the cultivation of self-confidence character through reading activity, the obstacles factors in the cultivation of self-confidence through reading activity, giving the solution in order to solve the problem in the cultivating of self-confidence character through reading activity. The data sources of this research are using informant, event, and documentation.The technic of data collecting is using interview, observation, and document research. For data validity is using the data credibility tested which is involving extension and triangulations, which are triangulation of data sources and triangulation of technic of data collecting. For the analysis is using interactive analysis in order to explain the data which is obtained by interview, observation, and document research. The result of the research showed that: 1. The implementation of routine reading in every single day for fifteen minutes before started the learning activity. 2. The cultivation of self-confidence through reading activity in fifteen minutes can be seen in the student's understanding about the story of the book is being successfully. 3. The obstacles which faced in this research are being on time, variety of books, reading fluency. 4. The solution of facing the obstacles are giving the reading book which is having similarity in student's handout, utilizing the library, and choosing the right book.

Reading, Character, Self-Confidence

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Double Speed Electric Rotary Machine As Technology In Making Remitan Crafts

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Abstract. Remitan Crafts are traditional children's toys made from clay in the form of miniature kitchen utensils that are handmade with human power as the main driving force for their manufacture. Therefore, making machines with electric motors is very important to increase comfort in making remitan crafts. The double speed electric rotary machine is a product creation that created to support remitan handicraft businesses and the comfortable of making remitan, with rotations that human can manage it adjusted to the level of need. The mechanism used is the rotary mechanism, the rotation is done by pressing the *on/off* button with the foot. The methods and stages used in machine manufacturing are field observation and review, designing machine prototypes, identifying product specifications, manufacturing and testing of double speed electric rotary machine. As for the results of the study, it was found that the double speed electric rotary machine is a machine in the form of a circular rotary table used to make pottery or remitan using electric power with 1 Phase 0,5; Rpm 1400 electro motor. This machine uses an electric control which can directly adjust the rotation. Engine with two speeds, high speed and low speed. This double speed electric rotary machine is a simple machine which is easy to install in people's homes or educational institutions, tourist attractions, and so on because of its low electricity consumptions..

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Development Of Social Science Teaching Materials By Using A Scientific Approach Based On The Surrounding Environment In Grade IV Students Of SD 1 Jati Kulon

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Abstract. Learning will be more meaningful if the learning process can integrate technology, nature, and culture, so that educational goals can be achieved. Behavioral changes that occur in a person are the result of the learning process. The development model used in research is a type of research R & D (Research and Development). The result of this research is that the resulting product in the form of social studies teaching materials based on a scientific approach based on the environment is the result of the development of existing teaching materials. The conclusions of this study indicate that social studies teaching materials based on a scientific approach based on the environment are proven to be effective in improving scientific thinking skills in the fourth grade students on the first semester of social studies learning in SD Negeri 1 Jati Kulon.

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Flipped Classroom Learning Based on Android Smart Apps Creator (SAC) in Elementary Schools

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Abstract. The thematic interactive learning model of flipped classroom based on smart apps creator is useful for improving the quality of learning. The use of the flipped classroom model based on Andoid Smart Apps Creator (SAC) in learning can increase student motivation creativity, activity, and learning outcomes. Problem formulation How the design and the implement of SAC-based flipped classroom learning model in elementary schools. Is the research objective is to analyze the design and implementation of Android-based flipped classroom learning in elementary schools. This research uses literature study method, field survey, and descriptive analysis. The results of the literature study and field survey state that teachers in Kudus have used the flipped classroom model but have not used the smart apps creator. Therefore, it is necessary to develop a flipped classroom model using Android based using SAC software to improve the quality of learning in elementary schools.

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Development of Ethno-mathematics based Mathematics Teaching Material Technology: A Needs Analysis

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Abstract. Ethno-mathematics based Mathematics teaching materials are combination of teaching materials that contain cultural elements associated with Mathematics subject content. This study aims to analyze the need for the development of ethno-mathematics-based mathematics teaching materials for fifth grade elementary school students. This research uses a qualitative approach with descriptive research type. The main data were obtained directly by the researcher through observation, interviews, and questionnaires. The research subjects were teachers and students of grade V SD 3 Temulus. The needs analysis activity begins with curriculum analysis (KI and KD), teacher and student analysis. Data were analyzed by reducing data, presenting data and drawing conclusions. The results showed that: (1) all materials in teaching materials were in accordance with the curriculum; (2) teachers and students need ethno-mathematic based teaching materials to find out about customs and culture in the surrounding environment. It can be concluded that ethno-mathematics based Mathematics teaching materials are needed by grade V SD students.

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Development Design Technology Comic Literacy Android Based *E-book*

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Abstract. This study aims to develop pictorial story literacy valid and practical based on android *e-book* on the theme of love plant and animals, sub two the benefits of plants of human life, especially in third-class of elementary school in Terangmas Undaan Kudus. This study is a Research and Development study using *Borg & Gall's*. The development steps are: (1) analyze the needs of learning in primary school; (2) develop the design of initial products; (3) validation and revisions; (4) small group test; (5) large group test; and (6) diseminations. The research method used was a questionnaire and interview in SD Terangmas and SD 1 Glagahwaru. Date was collected using questionaire of respon students and teachers. The learning is valid looking by the scores obtain from 4 validators, which are 52, 27, 21, and 51 with criteria of valid score. The percentage of positive responses given by the teacher and students respectively is 93.33% and 95% of the minimum criteria 75.01%.

Development Design Technology, comic literacy, android *e-book*

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Ethno-Edutainment Digital Module To Increase Students' Concept Understanding

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Abstract. The purpose of this study was to analyze effectiveness of ethno-edutainment digital moduleto increase students' concept understanding. The ethno-edutainment digital modulewas developed with the Borg and Gall models developed. The development phase of the ethno-edutainment digital moduleadds preliminary studios, product development and validation, and product trial trials. In testing the product, a large-scale trial was conducted. The effectiveness test was carried out on a large-scale trial with research subjects of fourth grade students at SD 4 Karangbener. The effectiveness of the ethno-edutainment digital modulewas accepted using test techniques. Based on N-gain trials Increased pretest and posttest scores of students produced 25% students increased in the high category, 62,5% students increased in the moderate category, and 12,5% students increased in the low category.

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Analysis Creative Thinking Ability and Scientific Communication in HOTS Learning Using Whatsapp Media

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Abstract: The purpose of knowing whenever the achievement of HOT learning through WhatsApp media is to measure the ability to communicate scientifically and think creatively in solving problems related to current problems related to the Covid-19 outbreak in the Population and Environmental Education (PKLH) course. The method used in quantitative research. Where a sample of 30 students in the even academic year 2019/2020 in the physics education study program, Indraprasta PGRI University. In obtaining research data taken from the assignment of environmental reports due to Covid-19 and presentations and discussions of problems that have been given by researchers as a group. The results of the study were students' communication skills at good stages which were 63.3 percent of all existing activities, discussion and reporting of activity results, this is in line with the results of research[10] and Eliyasni[12] explained that the ability to communicate using blended learning and Inquiry will produce scientific communication with an increase above the average learning rate which previously increased by 9% to 15% at the level of each indicator of the student's creative thinking ability test at good or moderate stages with an average of 63% to 73% based on an indicator of test ability, this is in line with jailan research[5] explaining that HOTs learning will produce a character that is creative. The conclusion in this research is HOT learning with whatsapp media in the experiment, the ability to communicate scientifically and the ability to think creatively has a positive or good change

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Analysis of The Need for Ethno-Digital Module Development Based on Language Politeness

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Abstract. The objectives of this study are (1) to investigate students' needs for digital modules, (2) to scrutinize students' needs for ethno content modules, (3) to explore students' needs for polite language use, and (4) to delineate the results of teacher interviews about the needs for ethno-digital module development based on language politeness. This research is conducted as a Research and Development study. This research utilizes the Borg and Gall model. It was conducted at MI NU TBS Kudus. The data was collected through the use some techniques including questionnaire, interview, and study documentation. Then, it was analysed using descriptive and quantitative technique. The results in this study indicate that 1) students need a digital software module Kvisoft Flipbook Maker in the form of a flipbook, (2) students need a module with ethno content such as traditional dances, traditional houses, customs or traditions, and non-fiction stories from certain areas, (3) students need a module that facilitates politeness, and (4) a politeness-based ethno-digital module which contains politeness in wisdom, acceptance, generosity, humility, approval, and sympathy.

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The Usage Of Sunda Manda Media Based On Visualization Auditory Kinesthetic To Improve Motoric Skills

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Abstract. This study aims to describe the usage of Sunda Mandamedia based on Visualization Auditory Kinesthetic to improve motoric skills for elementary school students. This research isqualitative research. The Researcher found a problem that currently children prefer to play gadgets or games that use technology compared to traditional games. There are two sources of data in this study, namely primary data sources and secondary data sources. Data collection techniques in this study are:observations, interviews, questionnaires, and documentation. Based on the analysis of the data obtained from the research results, namely a) the usage of textbooks is effective enough to be used as a learning media, b) the usage of interactive learning media and 3D animation videos can introduce the traditional Sunda Manda game to students, and c) the usage of Sunda Manda media based on Visualization Auditory Kinesthetic to improve motoric skills for elementary school students.

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Thematic Module Design Based on Local Wisdom for Class V Elementary School Students

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Abstract. This study aims to know effectiveness of thematic textbooks based on local wisdom on theme on the theme "Our Friends' Environment" material for class students V elementary school. Initial product development is a process of making media based on needs analysis. Students need textbooks that are close to the environment around them. Based on the results of the trial, this thematic teaching material is very valid, very interesting, and effective and can be applied in learning. This can be seen from the results of the validation test from three experts which show that the product is good. The results of the effectiveness test showed that the experimental class students had better learning outcomes than the control class. This means that textbooks based on local wisdom of Jepara Regency are developed effectively.

Keywords: thematic module, local wisdom, theme "Our Friends' Environment"

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The Role of The Nawangsih Folklore in The Education of Elementary School Children in The Era of Technology

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Abstract. This In an era of technology like this, elementary school children are no longer interested in folklore. Even though folklore contains a lot of values and character education for elementary school children, besides that, folklore can also preserve local wisdom. This study aims to describe the role of Nawangsih folklore in the education of elementary school children in the era of technology. Therefore the method used is qualitative method with data collection techniques of observation, in dept-interview, and transcription. Based on data and analysis, Nawangsih folklore in the education of elementary school children in the era of technology has roles including (1) as a cultural image of the past; (2) as a message in living a good life; (3) as entertainment; and (4) as learning and education.

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Development of Pocket Book Based on Science Literacy

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Abstract. The purpose of this study was to determine the feasibility of science literacy based pocket books for fifth grade elementary school students. This research method refers to the Borg band Gall theory, using ten stages of research, namely information gathering, research planning, initial product development, field testing, revision, product testing, revision of field product testing results, validation, final improvement, and implementation. The data collection techniques used were observation, interview and questionnaire techniques. Sources of data in this study were fifth grade students and teachers in Rembang Regency. The design of the pocket book development is based on scientific literacy developed by the researcher, consisting of 3 parts, namely introduction, content, and closing. In the content section, the material integrates 4 aspects of scientific literacy. Product feasibility is seen from the validation results of material experts and linguists. From the material expert validation process obtained an average result of 3.33 with a percentage of 83% and very good category. The validation of linguists obtained results of 85% with an average of 3.40 and the category was very good. Based on the validation results, a scientific literacy-based pocket book is suitable for use as a companion book in learning.

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The Correlations Between Academic Supervision Using Zoom Meeting Technology with Teacher Job Satisfaction

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Abstract. The research objective was to determine empirically the relationship between academic supervision of school supervisors and teacher job satisfaction. This study used a quantitative approach to survey method with the independent variable (X) academic supervision of school supervisors and the tied variable (Y) teacher job satisfaction. The research was conducted in public elementary schools in Bae District, Kudus Regency, with a purposive sampling technique of 50 teachers. Data collection through the online questioner whatsapp application. Data analysis method Product Moment correlation. The results showed that the rxy coefficient value was 0.868 at the p significance level of 0.000 (p <0.00), indicating that there is a very significant positive relationship between the academic supervision of school supervisors and teacher job satisfaction with an effective contribution of 75.4% the rest 24.6% Teacher job satisfaction is influenced by other factors

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Thematic Textbook Based on Local Wisdom Combined with Animation Media Using Barcode Scanning Technology

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Abstract. The purpose of this study was to see the feasibility of thematic textbook based on local wisdom combined with animation media using barcode scanning technology. This research method refers to the theory of Borg and Gall, using seven steps or implementation, namely potential research and problems, research planning, initial product development, field trials, revisions, validation, and final improvement. The data techniques used were observation, interview, and questionnaire techniques. The analysis used in this research is quantitative and qualitative analysis including observation of learning and validation of teaching material products. Sources of data in this study were fifth grade students and teachers in Sedan district. The feasibility of the product is seen from the results of the validation of material experts and linguists and responses with the results of responses from teachers and students. From the material validation process, an average result of 3.4 with a proportion of 84% and very good category. The validation of linguists obtained results of 85% with an average of 3.4 and very good category. Based on these results, the animation media in the thematic textbook based on local wisdom of Rembang were declared suitable for use in the learning process.

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Implementation Problem Based Learning Model Using Zoom Meeting Aplication

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Abstract: This study aims to determine the implementation of online learning with the problem based learning model in class V of Dempet 1 Public Elementary School. The research method used is qualitative, namely the research is carried out in natural conditions (natural setting). The research location is in class V Dempet 1 State Elementary School, Dempet District, Demak Regency. Data collection techniques using interviews, observation and documentation. The data analysis used Milles and Hubermen techniques, namely data collection, data reduction, data verification and conclusions. The results showed that online learning with a problem-based learning model in class V Dempet 1 Elementary school ran smoothly according to the learning tools (RPP and SYLABUS) and in accordance with the steps of the problem based learning model. Learning is carried out by forming groups then solving problems related to the material presented by the teacher. Students are required to identify problems, analyze and find answers.

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Technology of Learning Media for Dyslexia Children's

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Abstract. The purpose of this study was to develop a media for reading therapy for students with dyslexic learning disorders, to test the design of ABC sea sand box media for dyslexic children's reading therapy, and to describe the effectiveness of the ABC sea sandbox media for dyslexia reading therapy. This research method uses the R&D method. The researcher uses seven steps of conducting research. The research steps are as follows: information gathering, research planning, initial product development, field testing, revision, product testing, revision of field product test results. The analysis used in this research is quantitative and qualitative analysis. Includes reading therapy practice, learning observation, and validation of ABC sea sandbox media products. Analysis of ABC sea sand box media products for dyslexic children's reading therapy includes 6 stages. Data sources in this study were teachers and dyslexic students of SDN 2 Dorokandang and SDN 3 Soditan. The results of the prototype of the sea sand box media through the making of wooden boxes and utilizing the environment of students, using sea sand as a means to write with fingers based on the theory of VAKT therapy, guidebooks use media with quality manufacturing materials and attract students' attention. Fill in a book on how to use media and the stages of therapy using ABC sea sandbox media. After being validated by the validator, the score is 89,2 with a valid category. Then ABC sea sandbox media is applied to the experimental class and the result of N-gain calculation is 0.36 in the medium category. The effectiveness test in this study was carried out by comparing the results of students' reading performance in the control class and the experimental class. Obtained that tcount is 3,06. From the results of this study, it can be concluded that the ABC sea sand box can be used in the therapy of reading dyslexic children. Hopefully it can inspire teachers to innovate in other learning.

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A Need Assesment of Integrated Science Teaching Material Based Higher Order Thinking Skills (HOTS)

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Abstract. Indonesia's ranking on the 2018 PISA results, Indonesia was ranked 70 out of 78 countries that participated in the OECD with an average score of 396. The purpose of this study was to analyze the need for the development of HOTS-based integrated science teaching materials for grade VI elementary schools. The research data were obtained through literature study, documentation, observation and interviews. The data analysis involved several steps, namely, data reduction, categorization, validity checkings, interpretation, and inferences. The things analyzed include: 1) Local conditions of the school, 2) Student books and teacher books, 3) Curriculum, and 4) Student characteristics. The results of this research showed that students only use books from the government. There are no HOTS based books yet. Based on the result, the development of HOTS based integrated science teaching materials in grade VI elementary schools is required.

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The Effectiveness of the Development of Problem Based Learning Model Based on Bakiak Game Technology in Mathematics Learning in Elementary Schools

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Abstract. The aim of this study was to determine the effectiveness of the development of the bakiak game-based PBL model in mathematics learning in elementary schools. The study used the Research and Development (R n D) research method which was simplified into seven stages. Active, creative, innovative, and contextual problem-based mathematics learning must be considered. PBL as an alternative to the learning model needed today. Learning mathematics is learning that many students do not like. Learning must be transformed using attractive media. One of the technologies that can be used is bakiak games. This game is fun and can be used to discover the concept of speed as a comparison of distance and time. The results showed the development of the PBL model based on bakiak technology in mathematics learning was proven to be effective and could increase students' activity and mathematics learning outcomes

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Development Of Learning Media Technology Based On Natural Science Local Wisdom Materials

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Abstract. The objectives of this study were: to analyze teacher input, find out how to compile teaching materials, and to see the effectiveness of thematic integrated teaching materials based on local wisdom of science subject material theme 3: healthy food in grade 5 elementary school students. This research was conducted due to a lack of teaching materials, teachers were unable to develop teaching materials, and students' lack of insight into local wisdom. This research uses research and development methods. The data analysis technique used descriptive qualitative and quantitative analysis techniques. Qualitative data in the form of input, criticism, and suggestions for product improvements presented in a questionnaire instrument for reviewing teaching materials. Meanwhile, quantitative data in the form of numbers obtained from product trials. The results showed that the module teaching materials were feasible and effective. The feasibility of this thematic module product is based on the results of the material expert's validation, the total score is 73 and 116 in the very good category. The results of the effectiveness test in the product trial and test using the experimental class N-Gain value were 85.30% and 88.54% in the effective category.

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Development of Science Teaching Materials Based on STEM: A Needs Analysis

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Abstract. Science learning with the STEM approach aims to prepare students to compete and be ready to work in their respective fields. The science learning process will run more optimally when maximizing all teaching materials that support students. The aim of this research is to analyze the need for the development of Class V science teaching materials. This research is a descriptive study conducted through observation, interviews, and distributing questionnaires to class V teachers and students of the Fatmawati Cluster, Batangan District. The findings of the study show that: 1) students do not understand the benefits of experimental activities they do in their daily life and tomorrow when they are adult 2) teaching materials do not integrate various science supporting disciplines. Based on the research data, it can be concluded that it is necessary to develop teaching materials in the form of STEM-based practicum manuals.

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Effect of Achievement Motivation and Emotional Intelligence on Self-Regulation and its impact on Student Academic Resilience in the Covid-19 Pandemic era

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Abstract. The purpose of this study was to determine the effect of achievement motivation (X1) and emotional intelligence (X2) on self-regulation (Y) and its impact on student academic resilience (Z). The study was designed with a four-variable path analysis model to determine the relationship between independent and dependent variables and the causal relationship between variables. Use the study of motivation in the learning approach as a sub-research that supports learning methods for technology in education.The research was carried out on 60 students at four universities in Java and outside Java, namely Universitas Muria KUdus (Central Java), IAI Al Qolam (East Java), Muhammadiyah Sidenreng Rappang University (South Sulawesi), and IAIN Takengon (Aceh Special Region). The number of samples was determined by a proportional random sampling method based on the Slovin method. The data were collected using a closed questionnaire, which was distributed through google form media. To reveal the direct relationship between X1 and X2, and Y to Z using multiple regression analysis with the help of SPSS software. The conclusions of this study are (1) there is a positive and significant relationship between (X1) and (Z); (2) there is a positive and significant relationship between (X2) and (Z); (3) there is a positive and significant relationship between (Y) and (Z); (4) there is a positive and significant relationship between (X1) and (Y); (5) there is a positive and significant relationship between (X2) and (Y).The results of this study will have implications for the development and application of learning technology during the Pandemic.

Keywords: Achievement Motivation, Emotional Intelligence, Self-Regulation, Academic Resilience

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Teaching Material Technology Based On Local Wisdom

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Abstract. The purpose of this study was to determine the feasibility of thematic teaching materials based on local wisdom. This research method refers to the theory of Borg and Gall, using seven stages of research, namely potential and problems, research planning, initial product development, field trials, revisions, validation, and final improvement. The data collection techniques used were observation, interview and questionnaire techniques. Sources of data in this study were grade VI students and teachers in Rembang District. The feasibility of the product is seen from the results of the validation of material experts and linguists and is strengthened by the results of questionnaire responses from teachers and students. From the material expert validation process obtained an average result of 3.47 with a percentage of 87% and very good category. The validation of linguists obtained 90% results with an average of 3.6 and the category was very good. For the results of teacher responses obtained an average total score of 3.85 with a total score of 3466 and the category is very good. For the results of student responses obtained an average value of 3.94 and a total value of 568 which is very good category. Based on the results of the validation and reinforced by the results of student and teacher responses, the thematic teaching materials based on local wisdom of Rembang were declared suitable for use in the learning process

Teaching materials, local wisdom

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Education and Training Technology Increases Teacher Competence

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Abstract.study aims to analyze the effect of training on teacher competence.This study uses a quantitative approach to survey method with the independent variable x training, and the dependent variable y teacher competence. The research was conducted in public elementary schools in Jati sub-district, Kudus Regency.Teacher competence is a combination of personnel, scientific, technological, social, and spiritual abilities that become the standard of teacher professional competence, which includes material mastery, student understanding, educational learning, self-development and professionalism. Training is the development of skills, skills, dexterity (Skill Building) in carrying out tasks. Supervision is a coaching activity planned to assist teachers and other school staff in carrying out work effectively.This study also uses data collection methods used are questionnaires, observation, and literature study. Meanwhile, data analysis was performed through editing, coding, scoring, and tabulating.The results showed that training can improve teacher competence in SD NegeriJati, subdistrict Kudus Regency in 2020. The results of testing the training hypothesis can improve teacher competence which shows a t value of 2.134 and uses a significance limit of 0.002. the significance level is less than 0.05, and t table n = 74 is 1.993. Due to the value of t count> t table (2.134> 1.993), training can improve teacher competence.

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Needs Analysis of Picture Story Book using Augmented Reality Technology

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Abstract. As early as 2014, a survey of smartphone and tablet use by children has been done by the Asian parent Insightwith Samsung Kidstime in Southeast Asia. A total of 2,714 parents and 3,917 children aged 3-8 years havebeen the respondents of this survey. 85% of parents expect their children to use smartphones for educationalapps, but 72% of younger children prefer to play games.This study aims to analyze the needs of students and teachers for picture books with characters based on Demak local wisdom with AR technology for understanding the healthy lifestyle of elementary school students. This research is preliminary research from research and development. The design of this research is to need analysis or survey research. Data collection through questionnaires. Data were analyzed quantitatively. The results showed that the development of a picture book containing characters based on the local wisdom of Demak using augmented reality technology is needed for understanding students' healthy lifestyle.

Picture Story Book, Augmented Reality, Technology.

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The Use of Technology in Online Learning to Improve Discipline

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Abstract.
This study aims to analyze the use of technology in online learning on discipline. The research design used is descriptive correlational with inter-variable relationship design. The approach used in this research is quantitative. This type of research is correlational or looks for the influence between the independent variable teacher work motivation (X1) and principal leadership (X2), with the dependent variable: teacher discipline (Y). The research will be conducted July to August 2020 in 32 public elementary schools. The total population is 254 and 150 samples are randomly selected. The technique of data collecting is questionnaires. The data distribution will be tested using normality test, homogeneity test, linearity test, multicollinearity test. The data then analyzed using simple linear regression analysis test, t test, multiple linear regression analysis by SPSS. It was know that the data were normally distributed, homogeneous, linear and not multikolinier. Hypothesis tests found: 1). there is a relationship variables X_1 to X_2 by the equation $Y = 30.949 + 0.741\ X_1$ accepted as true., 2). there is a relationship X_2 to Y by the equation $Y = 25.189 + 0.778\ X_2$. 3). there is a positive relationship between motivation and academic leadership principals to teachers discipline expressed by the equation $Y = 14.459 + 0.459\ X_1 + 0.443\ X_2$.

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Illustrated folklore books as a simple technology to foster a culture of literacy

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Abstract. This study aims to develop folklore-based teaching materials that are packaged in picture story books and their effectiveness in fostering literacy skills in elementary school students in Pati district. In this study using the Research and Development (R&D) method of research and development. This research aims to develop teaching materials in the form of pictorial folklore books that can motivate educators and foster reading interest in children.The research subjects consisted of 1 control class and 2 experimental classes. Based on the research results it can be seen that 1) the development of teaching materials begins with a preliminary study through student and teacher interviews, then the results of the interview are adjusted to the theory and the results become a draft model that is validated by experts. 2). Folklore teaching materials in the form of picture story books are effective for fostering a culture of literacy among students seen from the experimental class and the control class which includes cognitive and psychomotor aspects.

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Science-Based Quantum Learning Models In Elementary School

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Abstract. This study aims to analyze the need for the development of a scientific-based quantum learning model and the implementation of the development of this learning model in elementary schools. This qualitative decriptive research used observation, interview, and documentation study techniques by using the researcher as the main instrument. The data was analyzed by data reduction, data explanation, data comparisson, and data conclusion steps. The data validity was done through triangulation. The study found that teachers still dominate learning in the classroom and its implementation tends to make students feel bored and bored with learning. There was lack of interaction between students and teachers. Many students do not understand the material and easily forget what they have just learned. Students didn't know the essence of the subject matter being studied. Students do not have enough opportunities to fully develop their knowledge and skills. One of the learning models that can solve students's problems in learning is by developing a scientific-based quantum learning model. It consists of learning syntax namely Grow, Experience, Name , Demonstrate, Repeat, Strengthen, Feedback, Conclude and Celebrate.

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Work Motivation in Efforts to Improving Perspective of The Head of Schools in Kudus

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Abstract. In the education system, there are several components that support the proper implementation of education, one of which is the teacher. Teacher involvement or teacher performance in education greatly affects teaching and learning outcomes. The teacher's performance is influenced by work motivation. This study aims to determine how the teacher's work motivation is useful for improving the performance of kindergarten teachers from the perspective of the principal, its effect on improving school quality, and how obstacles and solutions are in overcoming existing teacher performance. The research was conducted at kindergarten schools in Kota District, Kudus Regency. This research is designed using qualitative research methods with a case study approach (case study), sampling with purposive sampling method and the data is presented in the form of descriptions or descriptions not numbers. Teachers who have good work motivation will automatically have a sense of responsibility at work, have achieved goals, always develop themselves and have independence in action. Working with motivation so that it can be useful for many parties that be fun if it is done sincerely and always feels like or so that the competence have is increasing.

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The Effectiveness of the Development of Problem Based Learning Model Based on Bakiak Game Technology in Mathematics Learning in Elementary Schools

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Abstract. The aim of this study was to determine the effectiveness of the development of the bakiak game-based PBL model in mathematics learning in elementary schools. The study used the Research and Development (R n D) research method which was simplified into seven stages. Active, creative, innovative, and contextual problem-based mathematics learning must be considered. PBL as an alternative to the learning model needed today. Learning mathematics is learning that many students do not like. Learning must be transformed using attractive media. One of the technologies that can be used is bakiak games. This game is fun and can be used to discover the concept of speed as a comparison of distance and time. The results showed the development of the PBL model based on bakiak technology in mathematics learning was proven to be effective and could increase students' activity and mathematics learning outcomes.

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Social Science Learning In Covid 19 Pandemic By Using Internet Media

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Abstract. During the current covid 19 pandemic, fourth grade students of SDN Sumbermulyo 02 Winong District Pati Regency are learning online. Initially during the covid 19 pandemic, grade IV SDN Sumbermulyo 02 Winong District Pati Regency students had a little difficulty learning social studies online. Because the fourth grade students of SDN Sumbermulyo 02 Winong District Pati Regency before covid 19 were used to learning face-to-face (outside the network). Based on these problems, researchers conducted research on the use of internet media in social studies learning for grade IV SDN Sumbermulyo 02 Winong District Pati Regency during the covid 19 pandemic. This study aims to describe the use of internet media in social studies learning for grade IV SDN Sumbermulyo 02 Winong District Pati Regency during the covid 19 pandemic. Therefore, the method used is a qualitative method with data collection techniques of observation, interviews, and documentation. Based on data and analysis, there are two kinds of impact of internet media in social studies learning for class IV SDN Sumbermulyo 02 Winong District Pati Regency during the covid 19 pandemic, namely positive and negative. The positive impact of internet media for social studies learning for grade IV SDN Sumbermulyo 02 Winong District Pati Regency for the covid 19 pandemic is that children quickly find out information about social studies and children can quickly complete assignments. Then, the impact of internet media on social studies learning for fourth grade students of SDN Sumbermulyo Winong District Pati Regency in the covid 19 pandemic. Currently, students' eye health is reduced because they often stare at the screen of a smartphone or tab or notebook or laptop or computer when looking for information about social science. Social studies learning using internet media for class IV SDN Sumbermulyo 02 Winong District Pati Regency during the covid 19 pandemic became effective and efficient

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Determinant Factors of Extraordinary Elementary School Teacher Professionalism

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Abstract. This study aims to determine the effect of education, training, and teaching experience on the professionalism of Extraordinary Elementary School teachers in Kudus Regency. This research is an explanatory research with a quantitative approach. The research subjects were 63 SDLB teachers in Kudus Regency. The sampling technique was carried out by total sampling. The method of collecting data using a questionnaire. Data analysis using multiple regression analysis. The results showed that education, training and teaching experience had a significant effect on the professionalism of Extraordinary Elementary School teachers in Kudus Regency. The coefficient of determination (R^2) of 0.687 shows that the influence of education, training and teaching experience on teacher professionalism is 68.7%. Teaching experience has the greatest influence on teacher professionalism.

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Constraints in Implementing Online Learning during the Covid-19 Pandemic

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Abstract. One of the effects of the Covid-19 pandemic is the recommendation to carry out online learning. This study aims to explore the constraints faced by teachers, students and parents in implementing online learning during the Covid-19 pandemic. The method of this study is a qualitative research. The respondents were teachers, students, and parents from the first grade, the second grade, the third grade, the fourth grade and the fifth grade atthe state elementary school Mangunjiwan 2, Demak, Indonesia. The data were collected using interview and questionnairesand analysed using a qualitative descriptive analysis. The results showed that the constraints experienced by teachers, students, and parents in implementing online learning during the Covid-19 pandemic include limited internet quota, network disruption internet, students without cell phones, lack of student attention, disturbed parents' work, and teachers' difficulty in using technology and designing attractive online learning. This study suggests teachers to increase their skill for online learning and government to support the internet for online learning.

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The Effect of Principals Managerial Ability and Work Motivation on Teacher Performance

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Abstract. The purpose of this study was to analyze the effect of the Principal's managerial ability on teacher performance, the effect of work motivation on teacher performance, and the influence of Principal's managerial ability and work discipline in multiple ways on teacher performance. This research was conducted at the State Elementary Schools inTambakromo, Pati Regency.The type of research used is quantitative research through survey methods to elementary school teachers in Tambakromo, Pati Regency. The number of samples in this study was 191 respondents, determining the sample using incidental techniques. The data collection technique was by giving a questionnaire to the teachers. The data analysis test used validity, reliability, classic assumption tests and multiple linear tests which were processed using IBM SPSS 24.The results showed: (1) Principal's managerial ability (X1) was proven to have a significant effect on teacher performance in State Elementary Schools in Tambakromo, Pati Regency. The t-test result shows the sig value. equal to 0.000 < 0.05 and t-count 7.769 > t-table 1.9727. (2) Work discipline (X2) is proven to have a significant effect on teacher performance in State Elementary Schools in Tambakromo, Pati Regency. The t-test result shows the sig value. equal to 0.000 <0.05 and the value of t-count 9,024 > t-table 1.9727. (3) Principal's managerial ability and work discipline simultaneously proved to have a significant effect on teacher performance in State Elementary Schools in Tambakromo, Pati Regency. The results of the Ft-test show the sig. equal to 0.000 <0.05 and the value of f-count 269,523 > f-table 3,04 and simultaneously influence the teacher performance variable (Y) of 74,1%.

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The Influence of Student Motivation, School Environment, on Student Learning Achievement

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Abstract. Good learning achievement is expected to be able to become a quality human being. So that it can solve various forms of problems faced. Learning achievement can be influenced by student learning motivation factors and the school environment. The purpose of this study is to analyze the effect of learning motivation on student achievement and to analyze the influence of the school environment on student achievement in grade V Elementary School (SD). The research model is quantitative with the ex post facto approach. The study population was 100 class students. and research samples of 80 students. The sampling technique used cluster random sampling with two stage cluster sampling. Research instruments questionnaire and documentation. The data analysis techniques were instrument test, prerequisite analysis and hypothesis test. The results of the study:(1) there is a positive and significant influence of learning motivation on student achievement in grade V SD; (2) there is a positive and significant effect of the school environment on the learning achievement of grade V SD students.

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Media Technology Takontikasi Games Based of Realistic Mathematics

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Abstract. The purpose of this study was to analyze the need for instructional media in improving students' mathematical communication on FPB and KPK material for grade IV elementary school students and to test realistic mathematics-based takontikasi media designs. This research method refers to the theory of Borg and Gall, using ten steps of research implementation. The steps in the research are as follows: information gathering, product design, product manufacturing, initial product testing, product revision, product testing in the experimental class, revision of field product test results, validation, final product revision and dissemination. Data collection techniques used include observation, interviews and questionnaires. The analysis used in this research is quantitative and qualitative analysis which includes learning observations, and validation of takontikasi media products. Sources of data in this study were teachers and fourth grade students of SDN 1 Gunungsari and SDN 2 Sendangagung. Product feasibility is seen from the results of material expert validation. From the material expert validation process obtained an average result of 21,5 with a percentage of 89,5% and very good category. Based on the results of the validation of realistic mathematics-based takontikasi games, it is stated that they are suitable for use in the learning process.

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Android-based Math Learning to Improve Critical Thinking

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Abstract.This research aims to describe and the test of effectiveness of android-based integer learning through Smart Apps Creator (SAC) to improve the critical thinking skills at elementary school students. The method research is research and development. The development procedure is adapted from Borg & Gall using ten stages starting from research and information collecting, planning, develop preliminary form of product, preliminary field testing, main product revision, main field testing, operasional product revision, operational field testing, final product revision, dissemination and implementation. Product validation is performed by material, media, and practitioner validators. Research data is obtained from questionnaires, test, observations, and documentation of five elementary schools in Kudus. Analysis of research data uses T-test to determine effectiveness. The results were matched between classes treated using android-based media and SAC with comparison classes that were not treated using android-based media with SAC.The result of T-test in control and experiment class=4,457 trought the degrees significant 0,000<α=0.05. The study results of the experiment group were higher than the control group. Therefore, android-based integer learning with smartapps creator is effective for improving the critical thinking skills of elementary school students.

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HOTS - based scientific learning to increase the comprehension concept and science students skill

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Abstract. This research aims to know the effectiveness of HOTS based scientific learning models to increase the comprehension concept and science students skill. *The method was quasi-experiment with Pretest-Posttest Control Group Design.**The type of data* obtained in this study is quantitative data. Data collection techniques in this study were used observation, student questionnaires, and student evaluation tests.Data analysis using the homogeneity, normality, and t-test to test the effectiveness of the model.Based on the output table "independent samples test, it is known that the sig. (2-tailed) knowledge value is 0.224 and the sig (2-tailed) skill value is 0.507. Because the sig value is 0.224 and 0.507> 0.05, according to the basis of decision making in the independent sample t-test, it can be concluded that Ho is accepted and Ha is rejected, which means that there is a difference between the average knowledge and skill values of SDN Sayung 3 and SDN Sayung 4. Based on the research results obtained, it is known that the use of hots-based scientific learning models is proven to be effective in improving thecomprehension concept and science students skill. In addition to testing the effectiveness of the model, researchers also observed student activities to strengthen research results. Besides, data analysis of student and teacher responses showed the highest positive results.

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The Impact of Gusjigang: Production Technique, Skills and Independence of Citizens through Longlife Learning

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Abstract. This study has main purpose to investigate and explore the impact of gusjigang local wisdom tosociety (traders) at Kudus. This qualitative study used a multi-location ethnographic method. Research's finding revealed that gusjigang local wisdom has an impact technique and production skill which acquired through longlife education. The implementation of longlife education through two patterns, they are: (1) longlife learning in the family (inheritance) and (2) longlife learning in the workplace (apprenticeship). The two patterns,both the bag and knife entrepreneur teach production techniques and skills for the independence of citizens. The two patterns of longlife education are likely can be applied to society outside Kudus or to formal sector education through collaboration between formal education with industrial sector as an effort to provise production techniques and entrepreneurial skills.

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The Influence of Think Pair Share Model and Crossword Puzzle to increase Primary School Students' Mathematical Learning Interest

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Abstrak

The purpose of this research (1) Analyzing the influence of the Think Pair Share model on students' learning interest in Mathematics at SD 2 Ngembalrejo Bae Kudus (2) Analyzing the influence of the crossword puzzle media on students' learning interest in Mathematics at SD 4 Ngembalrejo Bae Kudus (3) Menganalisis Hasil Pengaruh model think pair share media crossword puzzle terhadap minat belajar siswa pada mata pelajaran Matematika at SD 5 Ngembalrejo Bae Kudus
This type of research is included in the type of field research, namely research in which researchers go directly to the field to obtain data or information directly by visiting respondents. The method used is a quantitative method of data analysis with statistics. In this study, the authors conducted a field study at elementary schools in the village of Ng rejo. The population in this study consisted of Grade 5 students in three elementary schools, namely SD 2 Ngembalrejo, SD 4 Ngembalrejo and SD 5 Ngembalrejo by using simple random sampling technique. In this analysis, the authors used statistical analysis, namely simple regression and correlation..
The results showed that 1) Think Pair Share model on students' learning interest in Mathematics at SD 2 Ngembalrejo Bae Kudus in a good category, is 51 in the interval range 43 - 49. 2) crossword puzzle media on students' learning interest in Mathematics at SD 4 Ngembalrejo Bae Kudus in very good category, yairu 53 in the interval range 52 - 56. 3) There is a significant effect of the think pair share model and crossword puzzle media on students' interest in learning mathematics at SD 5Ngambatrejo Bae Kudus, with a regression equation $\hat{Y} = 69.253 + 0.49$ X. The Think Pair Share method with crossword puzzle media has a positive and significant amounting to 0.068 which is included in the strong category and can contribute to students in developing student interest in learning by 0.462%.

Keywords: Think pair share model, Media Crossword Puzzle, Mathematics Learning Interest

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Content validity of Android-Assisted ProblemBasedLearning-Oriented Illustrated Stories Teaching Materials

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Abstract: his study is a validation step, which aims to develop illustrated story teaching materials oriented problem-based learning with Android assistance. Specifically, the improvement of student learning outcomes in science was focused on Class IV in the Public Elementary School TelukKulon. This research is a validation stage which is part of research and development. This product contains science material in the form of audio-visual based learning videos, some problems must be solved and also games as feedback. Validation was carried out by four experts by expert judgment. The product was categorized as feasible and valid with an average validity of 3.65 or with very valid criteria. Based on data analysis, it is known that this teaching material is suitable for research.

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Effectiveness of Blended Learning to Improve Critical Thinking Skills and Student Science Learning Outcomes

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Abstract. This study was based on the limited accessibility and connectivity of student learning during the COVID-19 pandemic. The purpose of this study was to determine effectiveness of Blended Learning in improving students' critical thinking skills and science learning outcomes. This study used a quasi-experimental design in the form of Nonequivalent control group design. Meanwhile, data collection used questionnaires and performance tests in SD Dabin II, Tlogowungu District. The data analysis in this study used the prerequisite test including the normality test and the homogeneity test, while the research hypothesis was tested using the T test and statistic descriptive test. The results in this study indicate that the Blended Learning model is effective in significantly improving students' critical thinking skills and science learning outcomes. This research is expected to become a foothold in further research as a further development on the use of blended learning.

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Manipulative Media Technology for Addition and Subtraction of Integers in Elementary Schools

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Abstract. The purpose of this study was to produce manipulative media to understand the concept of addition and subtraction of integers in grade VI students. This research method refers to Borg and Gall's theory in ten research steps including information gathering, research planning, initial product development, initial field trials, revision of trial results, main product field testing, revision of field product test results, large-scale field trials. final product revision. Data collection techniques were carried out through observation, interviews, and questionnaires. Data analysis used qualitative and quantitative analysis techniques including learning observations, and validation of manipulative media products. Sources of data in this study were teachers and students of grade VI SDN Sumbangrejo and SDN Segoromulyo. The results of this development research indicate that the media developed in the form of manipulative media made of wood can be said to be suitable for use in learning. Based on the validation from the expert, it was noted that the product was in the good category with an average score of 87%. whereas from the results of student responses the average percentage of responses to the media reached 90%. So that learning integers about addition and subtraction with manipulative media runs effectively.

Keywords:manipulative media, addition subtraction, and integers

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Thematic Learning Module Technology Based on Local wisdom

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Abstract. The purpose of this research is to produce thematic learning modules for class V SD based on local wisdom for the introduction of the Sedan Rembang culture which has validity and effectiveness. This research method refers to the theory of Borg and Gall. The research steps are as follows: research and information gathering, research planning, initial product development, initial product testing, revision of trial results, validation testing, final product revision, and implementation. Data collection techniques used were interviews, observation, and questionnaires. The analysis used in this research is quantitative and qualitative analysis including learning observation and validation of teaching material products. Sources of data in this study were teachers and grade V students in Sedan District. The design for developing this learning module based on local wisdom consists of 3 parts, namely an introduction, content, and conclusion. The content section of the module consists of quotes for basic competencies, learning objectives, learning concepts, and practice exercises. The results of the teacher's response, the average result was 3.73 with a total score of 470 in the very good category. For the results of student responses obtained an average result of 3.92 with a total score of 752 in the very good category. Based on the results of the validation and reinforced by the responses of teachers and students, the thematic learning module for class V SD based on local wisdom is declared feasible to be used in the learning process.

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Design of Invention-Based Student Activity Sheets Technology toImprove Learning Outcomes of Cube and Block Volume

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Abstract. This study aims to describe the characteristics of discovery learning activity sheet design for students, especially in class V SD Negeri Sukoharjo 01. The design of student activity sheets to improve student learning outcomes This study uses the Research and Development (R&D) method. describes the ten steps of conducting the research. However, in this study, due to time and cost limitations, the researcher simplified it into 7 steps, stage (1) potential and problems; (2) data collection; (3) product design; (4) design validation; (5) design revision; (6) product testing; (7) product revision. The design characteristics are based on the needs analysis of students 'worksheets. The analysis of the needs of students' worksheets will be carried out on 50 students in grade 5 as the experimental class and 40 students in the control class. Collecting data using a questionnaire on student activity sheets and student learning outcomes tests. Based on the validator test, the material expert team and discovery learning activity sheet media of students were feasible to use in learning. The next stage is to determine the effectiveness of the student activity sheet by conducting a large group field test of the experimental class in class V SDN Sukoharjo 01 and SDN Sukoharjo 03.

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Improving on Teacher Performance, Work Motivation and Compensation at the Public Elementary Schools

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Abstract. The purpose of this study was to analyze the effect of work motivation on teacher performance, the effect of compensation on teacher performance, and the influence of work motivation and compensation in multiple ways on teacher performance. This research was conducted at the State Elementary Schools in Tayu District, Pati Regency. This research used method of quantitative research through correlation. The number of samples in this study was 144 respondents. It distributed questionnaire to the teachers for data collection technique. The data analysis test used validity, reliability, classic assumption tests and multiple linear tests which were processed using IBM SPSS 24. The results showed that: (1) Work motivation (X1) is proven to have a significant effect on teacher performance in Public Elementary Schools in Tayu District, Pati Regency. (2) Compensation (X2) is proven to have a significant effect on teacher performance in Public Elementary Schools in Tayu District, Pati Regency. (3) Work motivation and compensation simultaneously proved to have a significant effect on teacher performance in Public Elementary Schools in Tayu District, Pati Regency of 81,5%.

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Science-Based Character Building

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Abstract. This study aims to (1) explain the factual cooperative learning model of the jigsaw type in elementary school, (2) explain the design of the character-based cooperative learning model that can improve understanding of science in elementary school, (3) explain the hypothetical model of character-based cooperative learning. understanding of science in elementary school after going through the validation test, (4) Explaining the final cooperative learning model based on character-based jigsaw can improve understanding of science in elementary school after going through a limited test. This study uses a Research & Development (R&D) approach. The research design used is based on the development carried out by Borg and Gall which consists of potential problems, data collection, product design, design validation, design revision, product testing and product revision. The product produced from this research is a character-based cooperative learning model. The limited trial results also showed an increase in learning outcomes in the experimental class, from 52.90 to 80.58. The development of a character-based jigsaw-type cooperative learning model can also improve the character of being friendly and socially caring.

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Analysis of TBLA (Transcript Based Lesson Analysis) SainsMastery of Mathematical Concepts

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Abstract. The Think Pair Share Learning Model assisted with conversion tool games is a model designed for student-centered learning. So that students as individual subjects and social fields become inseparable. The purpose of this study is to reveal the pattern of knowledge construction through conceptual mastery using Transcript Bassed Learning (TBLA). This study involved 28 students of grade 5 SDN Bendo. In this study, it was divided into 2 cycles, namely cycle 1 focused on the unit length conversion material while the cycle concentrated on the material addition and subtraction of length unit conversion. The activities in each cycle will be recorded via video or audio. Then the recording will be used as a transcript of the learning dialogue and then analyzed using Arvaja's (2007) student response type.Inaddition to the transcript analysis, the students were given a written exam through the LKS (Student Worksheet). For the first cycle the class average value reached 75.36, while in the second cycle the average value reached 78.93. The percentage of completeness of all cycles has exceeded 80%.

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THE USE OF TECHNOLOGY IN LEARNING CAN IMPROVE DISCIPLINE

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Abstract. This study aims to determine how much influence the leadership style has on the discipline of public SD teachers in Jati District, Kudus. The research approach used is quantitative reseach the population of this study were 278 civil servant teachers of SD Negeri in JatiSubdistrict, Kudus Regency. 74 samples were taken using random sampling technique. The data collection method used was a questionnaire method. prior to the data analysis, the validity and reliability tests were conducted, the classical assumption tests were then carried out with regression analysis (T) and multiple regression (F). The results showed that the principal's leadership style had an effect on the discipline of public elementary school teacher in JatiKabupaten Kudus as evidenced by the t count of 3.143 which was greater than the t table value of 0.679 with the significance probability of 0.001 smaller that $\alpha = 0.25$

Leadership style, teacher discipline

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Analysis of 4C-Based HOTS Assessment Module on Critical Thinking Ability

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Abstract. This study aims to analysis of 4C-based HOTS assessment module on critical thinking ability of sixth grade elementary school children. This research type is correlationalnon-experimental research with the form of ex post facto. The sampling technique used is the type of cluster random sampling. The data were obtained using a student and teacher response questionnaire. Data analysis using descriptive method. The results showed that 83,2% of students and 80% of teachers gave positive responses to the use of the 4C-based HOTS assessment module. Learning using the4C-based HOTS assessment module is more guiding students to think critically in solving problems.

Keywords: 4C, Critical thinking ability, HOTS.

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Students' Mathematical Representation Ability In Kudus Local Wisdom-Based Open-Ended Learning

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Abstract. This research examines the effectiveness of Kudus local wisdom-based open-ended learning to improve learners' mathematical representation ability. This research was done in the third grade during the even semester. This research is quantitative with several stages, such as promoting the preliminary study, planning, and implementing. This research used a *nonequivalent control group* design. The applied technique of collecting data was the test technique. The techniques of analyzing the data consisted of a test of minimum standard mastery achievements, an average difference test, and an N-gain test. The findings showed that (1) the learners' mathematical representation ability reached the minimum standard mastery, (2) the average mathematical representation ability of the learners were better than those taught conventionally, and (3) the mathematical representation ability were improved.

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STUDY OF THE NARRATIVE STRUCTURE OF LORAM KUDUS PEOPLE AS A MEANS OF LEARNING LITERARY APPRECIATION: CONTENT ANALYSIS BASED ON VLADIMIR PROPP

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Abstract

Kudus is one of the cities located in central Java province. The folklore of the Holy City is very diverse. In each sub-district has a very interesting folklore and also charged with local wisdom values. Researchers analyzed the story of the founding of the famous Wali Mosque in Loram Kulon village. As part of the literary work, the folklore of the founding of Wali at Taqwa Mosque and Sultan Hadirin contains pragmatic values that are very interesting to review. The research paradigm is a qualitative description as a research design with conten analysis method. Data provider is done by means of library studies using data in the form of writings as much as possible about structuralism studies according to Vladimir Propp. Data collection techniques are carried out with data-log tinging techniques (interview), observation, and documentation. The results of the study obtained two analsis results and discussions namely (a) the narrative structure of the folklore of Masjid Wali At-Taqwa and sultan hadirin and (b) the plan of implementing learning using the learning model think talk write (TTW).

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Development Of Learning Media Technology Based On Natural Science Local Wisdom Materials

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Abstract. The objectives of this study were: to analyze teacher input, find out how to compile teaching materials, and to see the effectiveness of thematic integrated teaching materials based on local wisdom of science subject material theme 3: healthy food in grade 5 elementary school students. This research was conducted due to a lack of teaching materials, teachers were unable to develop teaching materials, and students' lack of insight into local wisdom. This research uses research and development methods. The data analysis technique used descriptive qualitative and quantitative analysis techniques. Qualitative data in the form of input, criticism, and suggestions for product improvements presented in a questionnaire instrument for reviewing teaching materials. Meanwhile, quantitative data in the form of numbers obtained from product trials. The results showed that the module teaching materials were feasible and effective. The feasibility of this thematic module product is based on the results of the material expert's validation, the total score is 73 and 116 in the very good category. The results of the effectiveness test in the product trial and test using the experimental class N-Gain value were 85.30% and 88.54% in the effective category.

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Experiential learning with local wisdom: Prelimenary Study for Improving Analytical Thinking Ability

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Abstract. This research is motivated by the implementation of character education in Indonesia, which requires teachers and lecturers to innovate to develop lecturing methods. The goal is that the development of student character goes hand in hand with increased insight and cognitive abilities. This article aims: (1) to describe how to learn experientially, (2) inclusion of local wisdom values, and (3) implications in learning to improve analytical thinking skills. Local wisdom has an advantage because copying close to the learner's life can also improve two things at once, namely the thinking skills and character of each learner. The design of inclusive values of local wisdom is a preliminary study that can be used as a foothold further to develop a more effective learning system. In this article, two types of local wisdom are described, namely Gusjigang (Kudus local wisdom) and Banjar ethnic local wisdom. The method used is a meta-analysis by identifying scientific articles related to existential learning and the local wisdom of Gisjigang and the Banjar tribe. The extraction of values obtained is then consulted with experts in the field of learning innovation and experts in the values of the culture of Gusjigang and Banjar Ethnic. The result is found religious-spiritual values, enthusiasm to develop intellectually, and maintain self-existence. These values serve as the basis for the development of existential learning based on the local wisdom of Gusjigang and Banjar. Students' analytical thinking skills will be trained through learning by directly engaging in interacting with the culture and surrounding communities, which will then be used as discussion material in class.

Keywords: experiential learning, local wisdom, analytical thinking skills, gisjigang, banjar local wisdom.

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Improving Critical Thinking Ability Through Discovery Learning Model Based on Patiayam Site Ethnoscience

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Abstract. This study aims to determine the improvement of critical thinking ability toward grade IV elementary school student using Discovery Learning model based on Patiayam site ethnoscience. This research type is Quasy Experimental Design with the form of non-equivalent control group design. The sampling technique used is the type of Cluster Randong Sampling. The result of n-gain analysis show that the control class gets average 0,2535 as low category, while the experiment class gets average 0,5574 as medium category. The result of Independent Sample t-test show result of critical thinking ability on the observing with the result of Sig. (2-tailed) of 0,000 < 0,05. The conclusions of this study are the result of the critical thinking ability of the experimental group are higher than result of the control group.

Keywords: Critical thinking ability, Discovery Learning, Ethnoscience.

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Utilization of Information Technology For Kudus Local Values

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Abstract. The purpose of this research is to discribe the local wisdom value about rebo wekasam in jepang village, the terminology of Rebo Wekasan is special Rebo (Wednesday) because it doesn't look like another Wednesday. Its term is understandable, because Rebo Wekasan is last Wednesday in Shofar, second month in hijriyyah calendar. This research is using qualitative approach. Technic of data collecting is using literature review, interview, observation, recording, taping, and photography. The result showed that rebo wekasan tradition is having local wisdom value. The value itself is consisting of leadership value, devotion value, tradition value and cultural value.

Value, Local Wisdom, Rebo Wekasan, technology

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STEAM (Science Technology Egineering Art Mathematic) Based Module for Building Student Soft Skill

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Abstract. The purpose of this research is to develop steam-based science learning modelus to improve the soft skill of grade IV elementary school students. This research uses research and development (R&D) methods. The resulting product is a STEAM-based science learning module. This research was carried out in grade IV elementary school in Jekulo Kaupaten Kudus sub-district which was established by cluster rundom sampling technique. Technical analysis of the data used in this study includes quantitative descriptive data analysis related to the validity and readability of modules, as well as to find out the effectiveness of learning modules used for normalized gain tests as well as t tests. The result of testing tcount = 5,721 trought the degrees of significant 5,721 > 2,042 or $t_{count} > t_{table}$ and 0,000 < 0.005 or significance value < 0.05.The results of this study show that (1) the validation results performed on steam-based science learning modules have been valid to be tested in learning, (2) STEAM-based science learning modules are proven to improve the soft skills of grade IV elementary school students. From the description, it can be concluded that the development of steam-based learning models effectively improves the soft skills of grade IV elementary school students.

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The Leadership of Schools To Improve Teacher Performance In Al-Amin Kids Park

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Abstract. This leadership focuses on (1) the leadership style of the principal, (2) teacher performance, (3) the efforts of the principal (4) obstacles to the principal in improving the performance of the Japanese school teacher, Mejobo Suci Kindergarten. The purpose of this study was to obtain an overview of the principal's leadership style, teacher performance, the principal's efforts, and the principal's barriers to improving teacher performance. This research is a descriptive study with a qualitative approach. Research subjects: principal and 5 people. The technique used in the research is a survey using interviews, observation and documentation study as primary data collection tools. The results showed that the principal was predominantly applying a transformational leadership style, this style was able to improve teacher performance, the efforts made by the principal in improving teacher performance through coordination meetings, providing direction and guidance in carrying out their duties. Meanwhile, the obstacles faced are the lack of inadequate school facilities and infrastructure.

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Katela Media Technology for multiplication count operations

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Abstract. The purpose of this study was to determine the effectiveness of Katela learning media for multiplication count operations in grade II elementary school students in the Cut Nyak Dien cluster in Sulang district. This research method refers to the theory of Borg and Gall, using seven steps of research implementation, namely information gathering, research planning, developing initial products, field testing, revision, validation, and final improvement. Sources of data in this study were class II students and class II teachers in the Cut Nyak Dien cluster, Sulang district. There are 2 classes as a control class and an experimental class. The Control class carried out calcical learning activities without using media. The effectiveness test in this study was conducted by comparing the results of the students' multiplication written test in the control class and the experimental class. It is found that tcount is 6.44. From the results of this study, it can be concluded that the katella media for multiplication operations can be used in multiplication learning in grade 2 elementary school. Hopefully it can inspire teachers to innovate in other learning.
Media,Multiplication, Mathematics, Low grade students

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Development of social studies teaching materials based on local wisdom of the Samin Society Class V Elementary School

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Abstract. This study aims to: (1) describe the needs of teachers and students for samin society-based learning materials social study class v elementary school. (2) analyzing the effectiveness of samin society- Based learning materials social study class v elementary school. This research is a development research that uses ten steps, namely analysis of potentials and problems, gathering information, product design, design validation, design revision, product testing, product revision, and use trial, final product revision and dissemination. The practicality test and effectiveness test were conducted on 74 grade 5 students as the experimental class. Data collection used teaching material assessment sheets, practicality questionnaires, and tests of students' cognitive learning outcomes. Data analysis techniques used validation sheet analysis, practicality questionnaire analysis, teacher and student response questionnaires, and t-test acquisition analysis to determine the effectiveness of samin society-based teaching materials social study, teaching materials developed with effectiveness data which were then analyzed by normality test,test homogeneity, t test. The use social studies teaching materials assisted by based on local wisdom of the samin society is effective in increasing learning outcomes as evidenced by improving student learning outcomes. The mean pretest percentage in the control and experimental groups was almost the same, namely 63.81 in the control class and 64.50 in the experimental class. After being given the intervention, the posttest mean of the control and experimental classes increased to 76.19 and 83.25. The results of the t test obtained the value of t = 3.796. The t table value for df = 80 with a significant level of 5% is known to be 1.988.The conclusion is that social studies teaching materials assisted by based on local wisdom of the samin society are effective in improving social learning outcomes in elementary schools.

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Developing Socioculture-based Reflective Picture Storybook Media for Math Lesson

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Abstract. This research purports to: 1) create a reflective picture storybook media developed based on socioculture, and 2) determine the eligibility score of the socioculture-based reflective picture storybook media in improving social skill and creativeness of grade IV elementary pupils. This research follows ADDIE research and development method. Subjects for field testing came from Class IV State Elementary School (SDN) 2 Jonggrangan Kulon Progo, Yogyakarta, Indonesia and numbered 17 pupils. Data were obtained from observation, questionnaire, and documentation. The result from the research indicates that: 1) The reflective picture storybook is successfully developed based on sociocultural considerations; 2) Eligibility of the media according to evaluation by media expert in percentage reaches 85,81%, according to material expert reaches 86,02%, and according to students' response reaches 86,00%.

Keywords: reflective picture media, storybook, eligibility

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Analysis of Students' Reasoning in Answering Number Stories using Realistic Mathematics Approach

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Abstract. The purpose of this study is to analyse students' reasoning process in working on story problems using realistic mathematical approach in SMP PGRI Kasihan in the 2017-2018 school year. The type of research is qualitative research. To obtain data in this study instruments in the form of descriptive questions were compiled and developed by researchers (test method). In order to obtain accurate data, the tests used in this study must meet good test criteria. Research population in this small study was comprised of grade VII students from SMP PGRI Kasihan. Three groups of students participated in this study as research subjects. Data analysis conducted in this study was based on descriptive qualitative analysis techniques. Data analysis covered data reduction, data display, and drawing conclusion/verification. The results showed several locations of errors, types of errors, and causes of students' mistakes in solving story problems in class VII SMP PGRI Kasihan, i.e. students still had difficulty in solving problematic challenges that demanded ability to reason, were still not creative enough to prepare steps or strategy toward building complete answer, and not optimal in creating argumentation to answer problems that require ability to provide argument or argument in the form of reasoning as answer.

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THE CONTRIBUTION OF LEARNING INTEREST, ACTIVENESS, AND DISCIPLINE TO SMP STUDENTS' SOCIAL STUDIES LEARNING ACHIEVEMENT OF KASIHAN SUB-DISTRICT, BANTUL IN 2019

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ABSTRACT

The contribution of learning interest, activeness, and discipline to State Junior High School (SJHS) students' Social Studies learning achievement in Kasihan sub-district, Bantul was investigated. Population involved 413 students. Samples consisted of 200 SJHS students in Kasihan sub-district, Bantul. Descriptive and quantitative analysis was adopted as data analysis technique. Based on the descriptive analysis, learning interest was categorized as poor of 33.5%, activeness was categorized as good of 42.5 %, learning discipline categorized as good of 49.5 %, learning achievement categorized as fair of 51.5 %. Result of quantitative analysis showed that: (1) there was a positive and significant contributions of learning interest, activeness, and discipline, collectively, to learning achievement of 26.4% (R= 0.264 ; F= 23.457. Sig< 0.05); (2) there was a positive and significant contributions of learning interest to learning achievement of 0.028 < 0.05; (3) there was a positive and significant contributions of activeness to learning achievement of 0.039<0.05; (4) there was a positive and significant contributions of learning discipline to learning achievement of 0.033<0.05. Therefore, all hypotheses proposed are accepted.

Keywords: interest, activeness, learning discipline, learning achievement

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Determining Factors of Budgetary Slack in Local Governments

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Abstract. This study aimed to test the information asymmetry, budget participation, organizational commitment, and budget emphasis on the incidence of budgetary slack in Local Government Agencies in the Bantul Regency. The population in this research is the whole range of the Local Government Agencies in Bantul Regency. The sample was taken there were only related employees in the process of developing, the budget and accountability, and working at least 1 year, the respondents as many as 96. The sampling technique used purposive sampling. The data analysis technique used in this research includes the quality of data consists of the validity and reliability test, the hypothesis consisting of the multiple linear regression analysis, the F test, the t-test, and the R2 test. This research result indicates that; information asymmetry has had a positive impact on budgetary slack. Budget participation has had a positive impact on budgetary slack. Organizational commitment will not affect budgetary slack. Budget emphasis has had a positive impact on budgetary slack.

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Improvement of Corrosion Resistance of Tin Coated on Titanium Alloy for Biomedical Application

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Abstract. This work aims to study the effect of mechanical treatment technique on titanium coated with PVD for the enhancement of corrosion resistance for the biomedical implant. First, substrates were coated with TiN via PVD then applied the mechanical treatment through ultrasonic vibration. Results show that all coated samples treated with ultrasonic vibration improve the surface of the coated sample and produce a compact coating as compared with a substrate coated without mechanical treatment. The corrosion test evaluated by Potentiodynamic polarization and Electrochemical Impedance Spectroscopy indicated that all coated samples treated with mechanical treatment showed high corrosion resistance as compared with the untreated sample. It can be concluded that mechanical treatment which is a simple technic can be used as an alternative to improve the corrosion resistance thus reduce the implant and manufacturing cost for biomedical applications.

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Design of Forward Chaining for Identification Palm Oil Diseases Base on Expert System

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Abstract. Oil palm is the most important and highest producing oil crop in the world. Two types of oil are produced from the fruit, crude palm oil (CPO) and palm kernel oil (PKO). Palm oil is used for food, chemical industry, pharmaceutical, health supplements and as a source of biofuels. Among the various challenges faced by these crop farmers are diseases and pests that attack them. This research will design of forward chaining methode for expert system that can identify diseases in oil palm to provide solutions. The designs that have been produced include: knowledge representation about symptoms, diseases and solutions, input output systems and process design which includes data flow diagrams, databases, search for forward chaining using
a decision tree. This design can be implemented using various programming languages, especially database programming. The results of this research are very suitable as a reference for novice researchers who are interested in expert systems. The weakness of this research lies in the dominance of research that only comes from literature, it has not directly involved oil palm experts

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Effect of Frying on The Nutritional Composition of Catfish Nuggets (*Clarias gariepinus*) Substituted by Modified Cassava Flour (Mocaf)

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Abstract. Catfish is a freshwater fish that contains high protein. The cooking process affects the nutritional composition of food products including nugget. This study aimed to determine the nutritional content of catfish nuggets substituted by Mocaf before and after frying. Nuggets made from a combination of 90% catfish and Mocaf 10% of the total weight of the raw material. The nutrient content analysis method used was the water content by the oven method, the ash content by the dry ashing method, the protein content by the micro-Kjehdahl method, the fat content by the Soxhlet method, and the carbohydrate content by the by difference method. The results showed the catfish nuggets before being fried contained water 67,05%; ash 1,63%, fat 3,02%; protein 9,62%, carbohydrate 18,69; fiber 1,26%. The catfish nugget after frying contained water 55,11%; ash 2,04; fat 11,43%; protein 11,02%; carbohydrate 20,41% and fiber 2,64%.

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Developing Culture-Based Mathematics Learning Media with Adobe Flash for JHS Students

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Abstract. This research aims to produce a Yogyakarta-based culture of mathematics learning media by using Adobe Flash CS 6 for seventh-grade students of junior high school. This paper describes the quality of instructional media in terms based on validity, practicality, and effectiveness, which is followed by development research. This development of learning media follows the ADDIE procedure with the analysis, design, development, implementation, and evaluation stages. The quality of learning media is described based on the results of the validity of learning media content by material experts and media experts with the score scale 1-4. Student questionnaire responses are used to measure the practical aspects of the use of this learning media with a score scale of 1-4. The effectiveness of learning media is measured using the results of students' posttest after using the learning media. The observation sheet was used to find out the teacher's implementation in learning adapted to the 2013 curriculum. The instrument for the development of learning media was tested in class VII C of Yogyakarta Public Junior High School in 2018/2019. Yogyakarta Culture-based mathematics learning media developed with Adobe Flash CS 6 has fulled valid, practical, and effective criteria. Mathematics learning media were declared valid by material experts with an average score of 3.15, meanwhile, media experts stated valid with an average score of 3.23. Learning media is stated to be practically based on the student questionnaire responses with an average score of 3.15 in practical criteria. The effectiveness aspect fulfills the effective criteria based on the posttest results of students with an average value of 78.6.

Keywords: Learning Media, Mathematics Learning, Culture, Adobe Flash

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Systematic Literature Review of Profiling Analysis Personality from Social Media

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Abstract. The success or failure of a company is usually supported by the presence of reliable resources, especially human resources. Recruitment and placement of employees in the right position will have a significant impact on a company. Human nature and character are very diverse in their forms. DISC theory classifies personality into four types namely dominance, influence, steadiness, and compliance. The difference in the character of each type will of course affect the behavior style, how to deal with life pressures, and also how to communicate both directly and with social media. Through social media, a person can vent his feelings through the posts he uploaded. From these posts an analysis of the personality character he is possessed can be carried out. This systematic literature review is used to analyze and focus on techniques for conducting personality profiles through the use of social media. From this literature review of analysis, it can be obtained that the various personality classification methods and algorithms can provide a good level of accuracy.

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AThe Barriers of Innovation: Empirical research at MSMEs in the Special Region of Yogyakarta

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Abstract: This study aims to identify the implementation and innovation barriers faced by micro, small and medium enterprises (MSMEs). This research involves owners and employees to find out the innovation process that has been done. The population used in this study were all of MSMEs owners and employees in the Special Region of Yogyakarta. The sample consisted of 74 MSMEs involving 148 respondents. Samples were taken using a purposive sampling method. The collected data were analyzed using descriptive statistical analysis techniques. The results showed that the majority of MSMEs have innovation in the last five years. The owner is proven to have an objective perspective on innovation activities. The innovation made by most MSMEs is product innovation. The main barriers for MSMEs in innovation process are financial limitations, lack of knowledge, and employees' limited ability in the company.

Keywords: product innovation, marketing innovation, production innovation, organizational innovation

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Prediction of Banking Stock Prices Using Naïve Bayes Method

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Abstract. Bank Rakyat Indonesia (BRI) is one of the largest state-owned banks in Indonesia. It has prompted both local and foreign investors to buy shares in the largest bank in the country. Reading stock price trends is very important for investors to buy or sell the shares they own. The method usually used by investors is fundamental analysis and technical analysis. Analysis by reading financial reports is quite complicated and requires high accuracy. Besides that, it takes much time because of the large amount of data available. A banking stock price prediction can be a solution to make it easier for investors to read stock price movements. In this study, the authors will design a web-based system to predict banking stock prices using the Naïve Bayes method. This system can provide investors with ease and effectiveness in reading stock price movements.

1. Introduction

The stock is instruments of proof of ownership or participation of individuals or institutions in a company [1]. Stocks are volatile; they can go up or down. Shares that have risen and falling prices are also known as fluctuating stocks. Facing stock fluctuations or the ups and downs of stock prices has become commonplace as an investor. Stock fluctuations are normal, but if we overdo it, it can also be a disaster. If a company's stock suddenly drops very low, it can cause losses to many parties [2].

Bank Rakyat Indonesia (BRI) is one of the largest state-owned banks in Indonesia [3]. PT Bank Rakyat Indonesia's Tbk (BBRI) share price on daily stock trading has increased, even approaching the highest price level [4]. Based on trading data from the Indonesia Stock Exchange, BRI's share price in December 2019 rose 1.15% to a level of Rp.4,400 / unit. Stock trading volume reached 833.52 million shares valued at IDR 3.59 trillion. It has prompted local and foreign investors to buy shares in the country's largest bank in the country [5].

Reading stock trends is very important for investors to know where the money is going, whether it becomes more or tends to be less. Investors need to know how to analyze future stock price movements[6]. The method usually used by investors is fundamental analysis and technical analysis. This fundamental analysis uses financial statement data by looking at various financial statements[7]. At the same time, technical analysis can decide by reading a stock price chart in the form of lines. Analysis by reading financial reports is quite complicated and requires high accuracy[8]. Besides that, it takes much time because of the large amount of data available.

Current technology makes it possible to process data precisely, quickly, and accurately. With the help of information technology, all data processing in the system can be done in various places to be more effective and efficient. The application of techniques in large-scale data processing presents new challenges and techniques which eventually give rise to a new methodology called machine learning[9].

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Data mining is a process that uses statistical techniques, mathematics, artificial intelligence, and machine learning to extract and identify useful information and related knowledge from various large databases [10]. Machine learning often used for classification include the Naïve Bayes method [11] [12], C45 [13] dan Support Vector Machine [14]. The naïve Bayes method was introduced by a British scientist named Thomas Bayes, where this method successfully answered problems in the fields of probability and statistics [15]. The advantage of using the Naïve Bayes method is that it can self-correct, which means that when data changes, so do changes in the results.

Based on this background, we propose "Prediction of Banking Stock Prices Using the Naïve Bayes Method." It hoped that this system could be used as a medium to facilitate users, especially stock investors, to find out predictions of the movement (up / down) of stock prices. The variables used to determine the classification of the ups and downs of stocks in the study include (1) Lag1 (percentage of return on the previous day), (2) Lag2 (percentage of return on the previous two days), Lag3 (percentage of return for the previous three days), Lag4 (percentage of return for the previous four days), Lag5 (previous five days return percentage), Volume, Today (present return percentage) and Direction (ascending and descending classification).

2. Methodology

Naïve Bayes is a simple probabilistic classification that calculates a set of probabilities by summing the frequencies and value combinations from a given dataset. The Bayes theorem will assume all attributes are independent or not interdependent given by values on class variables [15].

Naïve Bayes is based on the simplifying assumption that attribute values are conditionally independent if an output value is given. In other words, given the output value, the probability of observing collectively is the product of individual probabilities. The equation of the Bayes theorem is:

$$P\ (H|X) \frac{P(X|H).P(H)}{P(X)} \tag{1}$$

Where :

X	: Data with an unknown class
H	: The data hypothesis is a specific class.
P(H|X)	: The probability of hypothesis H under condition X (posterior probability)
P(H)	: Probability hypothesis H (prior probability)
P(X|H)	: Probability X based on the conditions in the hypothesis H
P(X)	: Probability X

If there is numeric data, then first look for the mean and standard deviation of each parameter that describes the numerical data. The formula used to calculate the calculated average value (mean) can be seen as follows:

$$\mu = \sum_{i=1}^{n} x_i \tag{2}$$

Where:

μ	: Data with an unknown class
x_i	: The data hypothesis is a specific class.
n	: The probability of hypothesis H under condition X (posterior probability)

And the equation for calculating the standard deviation (standard deviation) can be seen below:

$$\sigma = \sqrt{\frac{\sum_{i=1}^{n}(x_i - \mu)^2}{n-1}} \tag{3}$$

Dimana :

σ : standard deviation
x_i : x value
μ : average count
n : number of samples

To explain the Naïve Bayes theorem, the classification process requires several clues to determine what class is suitable for the sample being analyzed. The following is an example of a Stock Prediction Datamining Calculation Using the Naïve Bayes Algorithm [16].

Calculate the value of the gaussian distribution or normal distribution using the formula:

$$P(X_i = x_i|Y = y_i) = \frac{1}{\sqrt{2\pi}\,\sigma} e^{-\frac{(x_i-\mu_{ij})^2}{2\sigma^2 ij}} \quad (4)$$

Where:
π: a constant with the value 3.14159. . .
e: exponential number with a value of 2.7183. . .
μ: average (mean) of the data
σ: standard deviation of normally distributed data.

2.1. Dataset

The data used in this study are historical share price data at BRI Bank downloaded from yahoo.finace for the last five years. 1300 data have been downloaded. The data is divided into two parts, namely, 70% of the data is used as train data and the rest is used as testing data.

2.2. Data Flow Diagram

DFD level 1 consists of three main processes, namely admin login, master data, and Naïve Bayes analysis. The system carries out the admin login process by displaying the login session and carried out by the admin by entering a username and password. The admin is carried out master data process by inputting the stock price data then. The admin gets the output from the system in the form of stock price data and stock price predictions. The Naïve Bayes analysis process accepts input in the form of adj comparative data, which is processed from the admin and the user. The output of this process is the result of a Naïve Bayes analysis. DFD level 1 on the system can be seen in Figure 1.

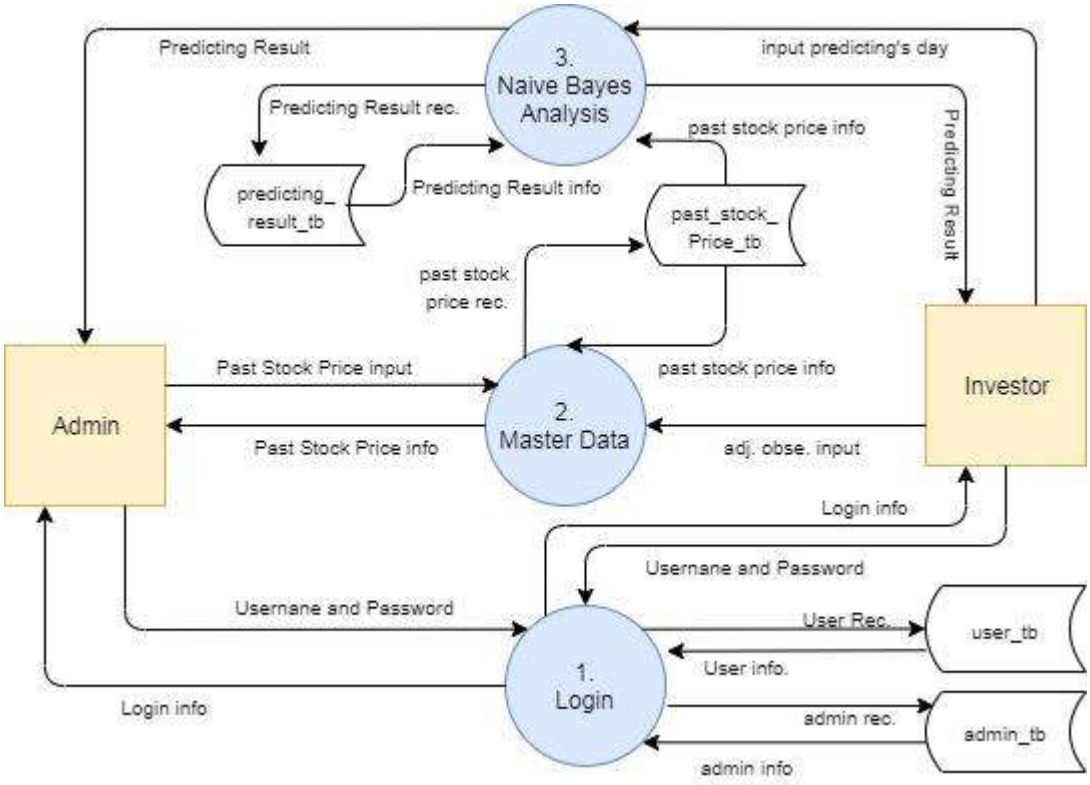

Figure 1. DFD First Level

3. Result and Discussion

The prediction system for banking stock prices using the naïve Bayes method can provide results in predicting stock price classifications based on previous stock data. This system can be a reference for users and investors in knowing the movement (up / down) of stock prices. This system consists of several pages, the login page, past share page, prediction page.

The admin login page is the page used by the admin to perform the admin login process. The admin login form is used as protection to protect the admin form from unauthorized people. This form functions to enter a username and password. Then the system will check whether the username and password entered matches the database. The last page is a page used to upload stock price data, which is used as train data.

The user's prediction results page is a page that is used to display the output in the form of calculation results using the Naïve Bayes method. The results of the calculation of the stock price prediction are displayed in table form. These results include predicting stock prices on the next day (H + 1) to the next ten days (H + 10). The predicting page can be seen in figure 2.

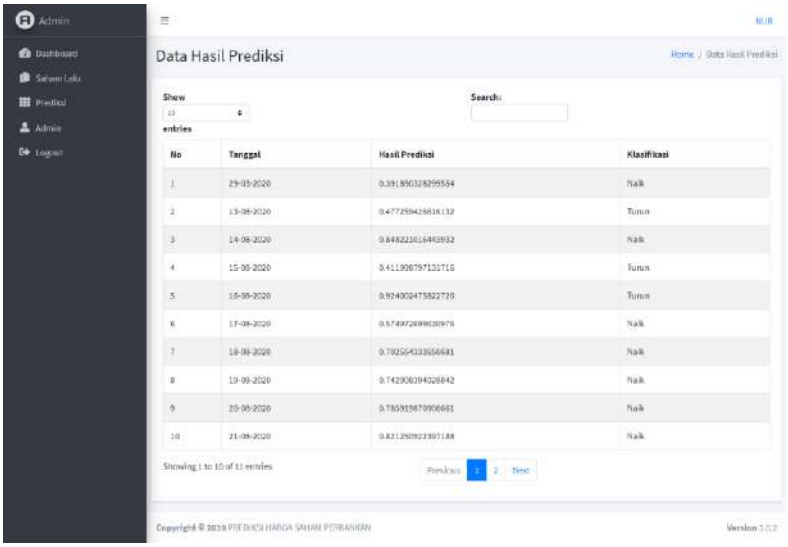

Figure 2. Predicting Page

The evaluation test content several questions, which are : the ease of using the program and the suitability of input with the information generated (output). Based on the results of the questionnaire about the appearance of the program, the following information was obtained, 27% of respondents answered very interestingly, 60% of respondents answered interesting, and 13% answered less attractive. The evaluation diagram can be seen in Figure 3.

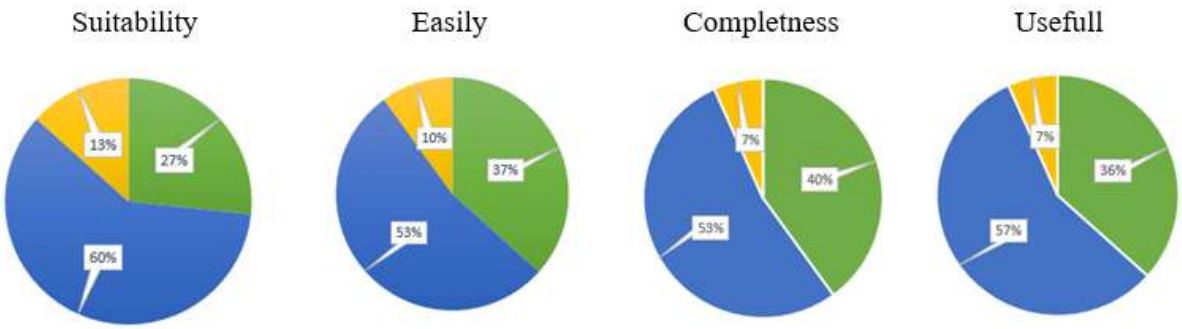

Figure 3. Evaluation System

Based on the questionnaire about the ease of using the application, the following information was obtained, 37% of respondents answered very easily, 53% respondents answered easily, 10% of respondents answered less easily. Based on the results of the questionnaire about the completeness of the information presented, the following data were obtained, 40% respondents answered very well, 53% respondents answered well, 7% respondents answered poorly. Based on the questionnaire about the benefits of the application for users, the following data were obtained, 36% of respondents answered very usefully, 57% useful. Accuracy on the model is calculated by matching the system's predicted results with the actual results on the testing data. With the model obtained in the system, the model's accuracy rate of the model is obtained at 57%.

4. Conclusions

Prediction of Banking Stock Prices Using the Naïve Bayes Method has produced a banking stock price prediction system to assist in considering decision making for stock investors. Prediction results can

be used as a medium to facilitate users, especially stock investors, to find out predictions of stock price movements (up / down).

Testing the application of the banking stock price prediction system using the Naïve Bayes method show that the system can run well. It can be proven by the highest value of the results of the trials carried out, namely the application display trial, 60% of respondents answered interestingly, the ease of running the program 53% of respondents answered very easily, 53% of respondents answered program performance well, and 57% of respondents answered usefully. Accuracy on the model is calculated by matching the system's predicted with the actual results on the testing data. With the model obtained in the system the accuracy rate of the model is obtained at 57%.

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