Back

	JOURNAL OF PH	IYSICS: CONFER	ENCE SERIES		
	иния Contranted Physics Contranted Streit Constraint and Physics Contranted Streit Physics Contrast of Physics Physics Contrast of Physics Contrast of Physics Contras	Englis W Pub Cc Language of public	h title: Journal of Physics: Confe ISSN: 1742-6588 (print), 1742-6 DOI: <u>n/d</u> ebsite: https://iopscience.iop.or (https://iopscience.iop.or lisher: IOP Publishing Ltd. untry: GB ration: <u>n/d</u>	rence Series 596 (online) g/journal/1742-6596 rg/journal/1742-6596)	
	Deposited publications: 0> Full	text: 0% Abstract: 0% Keywo	rds: 0% References: 0%	Issues and contents	
	Journal description ()	Details () Scier	ntific profile () Editoria	ll office ()	
	Publisher () The open a effective p	ccess Journal of Physics: Cor oceedings publication servi	iference Series (JPCS) provides a f :e.	ast, versatile and cost-	
	Non-indexed in the ICI Jour	nals Master List 2023			
	Not reported for evaluation	on Archival ratings 🕻			
Main page (http://jml.i Rules	ndexcopernicus.com) . MSHE points:		COPERNICUS	European Funds Smart Growth Develop	n Union an Regional oment Fund
(http://indexcopernicu	is.com/images/PDF/Regulamin_s 40 pkt = physical sciences , as engineering , materials engin	ervisu internet okte go /judge tronomy , environmental er eering	xcopernicus.com) igineering, mining and energy , ch	nemical sciences , mechanical	
(http://indexcopernicu	us.com/images/PDF/Polityka_pry	watnosci.pdf)			
. Return policy					

(http://indexcopernicus.com/images/PDF/Polityka_zwrotow.pdf)

© 2025 Index Copernicus Sp. z o.o.



Source details

Journal of Physics: Conference Series	CiteScore 2023	í
Years currently covered by Scopus: from 2005 to 2025	1.2	
ISSN: 1742-6588 E-ISSN: 1742-6596		
Subject area: (Physics and Astronomy: General Physics and Astronomy)	sjr 2023 0.180	()
source type: Conference Proceeding		
View all documents > Set document alert	SNIP 2023 0.303	Ō

CiteScore CiteScore rank & trend Scopus content coverage



CiteScoreTracker 2024 ①



CiteScore rank 2023 🛈

Category	Rank	Percentile
Physics and Astronomy General Physics and Astronomy	#182/243	25th

View CiteScore methodology angle CiteScore FAQ angle Add CiteScore to your site $c^{
m o}$

Q

About Scopus

- What is Scopus Content coverage
- Scopus blog
- Scopus API

Privacy matters

Language

日本語版を表示する 查看简体中文版本 查看繁體中文版本 Просмотр версии на русском языке

Customer Service

Help Tutorials Contact us

ELSEVIER

Terms and conditions $\eqsim~$ Privacy policy $\eqsim~$ Cookies settings

All content on this site: Copyright © 2025 Elsevier B.V. \neg , its licensors, and contributors. All rights are reserved, including those for text and data mining, AI training, and similar technologies. For all open access content, the relevant licensing terms apply. We use cookies to help provide and enhance our service and tailor content.By continuing, you agree to the use of cookies \neg .

RELX[™]

sir jiii (j	si si G							CS Salmago
	Scimago Journal & Country Rank Ent			Enter Journ	al Title, ISS	SN or Publisher Name		
	Home	Journal Rankings	Journal Value	Country Rankings	Viz Tools	Help	About Us	



SCOPE

The open access Journal of Physics: Conference Series (JPCS) provides a fast, versatile and cost-effective proceedings publication service.

 \bigcirc Join the conversation about this journal

 $\frac{1}{2}$ Quartiles

Close

Ads by **clickiọ**





Metrics based on Scopus® data as of March 2025

E Elena Taskova 4 months ago

Dear Editorial Board,

Since I do not see an archive for Journal of Physics: Conference Series, can I get an official document from you that the journal had a quartile for the period from 2012 to 2020? Thank you in advance! Best regards, Elena Taskova

reply



Melanie Ortiz 4 months ago

Dear Elena, Thank you for contacting us. Unfortunately, SCImago doesn't issue certific Ads by **clickio** Best Reg: SCImago SCImago Team

535512-618

Journal of Physics Conference Series

The 11th Biennial Conference on Classical and Quantum Relativistic Dynamics of Particles and Fields



VALUES 1228- 2019

4-T Jess 2058 Militale, Yacatin, Masica

Romon Mente Land

The open access journal for conference proceedings

lopsolence.org/ jpcs

IOP Publishing

The Committee of 6th South East Asia Design Research International Conference (SEA-DR IC) 2018

Steering Committee

Prof. Dr. Ir. Samsul Rizal, M. Eng (Rector of Syiah Kuala University)
Prof. Dr. Djufri, M. Si (Dean of FKIP Syiah Kuala University)
Prof. Dr. Maarten Dolk
Prof. Dr. R.K Sembiring
Dr. Y. Marpaung
Prof. Dr. Zulkardi, M. I. Kom, M.Sc.
Prof. Dr. Sutarto Hadi, M.Si., M. Sc.
Prof. Dr. Dian Armanto, M.Pd, M.Sc.
Prof. Dr. Ahmad Fauzan, M.Pd, M. Sc.
Prof. Dr. Turmudi, M.Ed, M.Sc.
Dr. M. Ikhsan, M.Pd. (Head of Mathematics Education Department of Syiah Kuala Univesity)
Prof. Lilia Halim

Organizing Committee

: Dr. Rahmah Johar, M.Pd.
: Dr. Anwar, M.Pd.
: Dr. Mailizar, M.Ed.
: Elizar, Ph.D.
: Dr. Cut Morina Zubainur, M.Pd.
: Suhartati, M.Pd.

Scientific Committee

Scientific Committee Chair : Prof. Dr. Marwan, M. Si Scientific Committee Member : Prof. Maarten Dolk Prof. Rohaida Mohd. Saat Prof. Dr. Musri Musman, M.Sc. Prof. Dr. Ratu Ilma Indra Putri, M.Si. Prof. Dr. Muchlisin Z.A, M.Sc. Prof. Dr. Adlim, M.Sc. Prof. Dr. Ahmad Fauzan, M.Sc. Dr. Cathy Wissehr Dr. Wanty Widjaja Dr. Abdul Halim Abdullah Dr. Ariyadi Wijaya, M.Sc. Dr. Al Jupri, M.Sc. Dr. Tatag Yuli Eko Siswono, M.Pd. Dr. Yenita Roza, M.Sc. Dr. Shintia Revina, M.Sc. Dr. Neni Mariana, M.Sc. Dr. Rooselina Ekawati, M.Sc. Dr. Nasrullah Idris, M.Eng. Dr. Hongki Julie, M.Pd. Dr. Taufik Fuadi Abidin, M.Tech.

Dr. Rully Charitas Indra Prahmana

Dr. Supriatno, M.Si. Dr. Said Munzir, M.Eng.Sc. Dr. Suhartono, M.Sc. Aysenur Alp Zarlaida Fitri, M.Sc. Veronika Fitri Rianasari, M.Sc. Meliasari., M.Sc. Zetra Hainul Putra, M.Sc. Destina Wahyu Winarti, M.Sc. Fridgo Tasman, M.Sc. Fatimatul Khikmiyah, M.Sc. Achmad Badrun Kurnia, M.Sc. Mulia Putra, M.Pd., M.Ed. Rita Novita, M.Pd. Bustang Buhari, M.Sc. Intan Kemala Sari, M.Pd.

Keynote Speakers

Prof. Berinderjeet Kaur	National Institute of Education, Singapore
Prof. Maarten Dolk	Utrecht University, the Netherlands
Prof. Lilia Halim	University Kebangsaan Malaysia, Malaysia
Dr. John Willison	the University of Adelaide, Australia

■ IOPSCIENCE Q Journals Books Publishing Support Description Login	
Table of contents	
Volume 1397	
← <u>Previous issue</u> <u>ivext issue</u> →	
The 6th International Conference on Research, Implementation, and Education of Mathematics and Science 12–13 July 2019, Yo Indonesia	gyakarta,
Accepted papers received: 31 October 2019 Published online: 19 December 2019	
Open all abstracts	
Preface	
OPEN ACCESS Preface	011001
View article PDF	
OPEN ACCESS Peer review statement	011002
■View article PDF	
Papers	
OPEN ACCESS	012001
The effects of annealing temperature and angular velocity variation on microstructure and optical properties of barium titanate (BaTiO ₃) using chemical solution deposition method	
R. P. Rini, F. Nurosyid and Y. Iriani	
View article PDF	
OPEN ACCESS	012002
Effect of pre-annealing and annealing temperature on microstructural and optical properties of multiferroic BiFeO ₃ thin films prepa by chemical solution deposition (CSD)	red
E B Agustina, Y Iriani and R Suryana	
View article PDF	
	012003
Characteristics and Optical Properties of Fluorine Doped SnO ₂ Thin Film Prepared by a Sol–Gel Spin Coating	
Image: Subject of the state	
The effect of immersion temperature using chlorophyll sensitizer (<i>Amaranthus hybridus L.</i>) on the performance of dye-sensitized solar cells	012004
F. Nurosyid, D. D. Pratiwi and K. Kusumandari	
View article PDF	
ODEN ACCESS	
The Effect of Indium Doped SnO ₂ Thin Films on Optical Properties Prepared by Sol-Gel Spin Coating Technique	012005

A Doyan, Susilawati, S. Hakim, L. Muliyadi, M. Taufik and Nazarudin

OPEN ACCESS		012006
Numerical and	Experimental Study of Thermal Response of an Electrified Nickel Wire	
N. F. Lubis, P. M.	Widartiningsih and S. Viridi	
View article		
OPEN ACCESS		012007
Optical Activity	Effect on Planar Chiral Metamaterials	
Juliasih Partini ar	nd Restu Widiatmono	
View article		
OPEN ACCESS		012008
Identification of	i Subsurface Lithology in Sendang Mulyo, Purwoharjo Village, Samigaluh Subdistrict, Kulon Progo Regency	
L. Katriani, D. Da	rmawan, B. Ruwanto, H. Lutfiana and H H. Prameswari	
View article	PDF	
OPEN ACCESS		012009
Conceptual Fra	amework of Reflective-Inquiry Learning Model to Promote Critical Thinking Ability of Preservice Physics Teachers	
N N S P Verawat	i, Hikmawati and S Prayogi	
View article		
OPEN ACCESS		012010
Development c (HOTS) of Sen	of The Android-Based Interactive Physics Mobile Learning Media (IPMLM) to Improve Higher Order Thinking Skills ior High School Students	
Beatrix Elvi Dasil	va and Suparno	
View article	PDF	
OPEN ACCESS		012011
Correlation bet	ween increasing mastery concepts of wave and optics and habits of mind prospective physics teacher students	
E Susilowati, Suy	/idno, T Mayasari, N Winarno, D Rusdiana, I Kaniawati and P H Santoso	
View article	PDF	
OPEN ACCESS		012012
Student's Prob	lem Solving Skills in Collaborative Inquiry Learning Supplemented by Formative E-Assessment : Case of Static Fluids	
Ernila Siringo Rir	igo, Sentot Kusairi, Eny Latifah and Awal M R Tumanggor	
View article	™PDF	
OPEN ACCESS		012013
Developing Ph	ysics Comic Media a Local Wisdom: Sulamanda (Engklek) Traditional Game Chapter of Impulse and Momentum	
Fita Permata Sar	i, Syafridatun Nikmah, Heru Kuswanto and Ratna Wardani	
View article	™PDF	
OPEN ACCESS		012014
Synthesis of th	e Cognitive Aspects' Science Literacy and Higher Order Thinking Skills (HOTS) in Chapter Momentum and Impulse	
Himawan Putran	a and Supahar	
View article		
OPEN ACCESS		012015
Developing phy	sics test instrument in the context of ocean literacy	
Purwoko Haryadi	Santoso and Mutmainna	
View article		
OPEN ACCESS		012016
Analysis of Phy Comics in Sour	/sics Aspects of Local Wisdom: <i>Long Bumbung</i> (Bamboo Cannon) in Media Development for Android-Based Physics nd Wave Chapter	

OPEN ACCESS 012017 Developing of Bloomian HOTS Physics Test: Content and Construct Validation of The PhysTeBloHOTS Edi Istiyono, Wipsar Sunu Brams Dwandaru and Muthmainah PDF View article OPEN ACCESS 012018 Analysis of Students' Critical Thinking Skills at Junior High School in Science Learning A. Febri, Sajidan and Sarwanto View article PDF OPEN ACCESS 012019 Analysis of Students' Misconception Based on the Use of Learning Objectives in Classification of Materials and Their Properties M. A. S. Cahyanto, Ashadi and S. Saputro View article PDF OPEN ACCESS 012020 Profile of Students' Creative Thinking Skills using Open-ended Multiple Choice Test in Science Learning R. D. Pratiwi, Ashadi and Sukarmin PDF View article OPEN ACCESS 012021 Misconception Analysis Based on Feedback of Computational Thinking Result of College Students S Masfuah and F Fakhriyah View article PDF OPEN ACCESS 012022 Treatment of electronics industry effluent using low-cost and commercial adsorbents: A comparative study A Kamari, R Shamsudin, A A A Eljiedi, S N M Yusoff, S T S Wong, S Ishak, J Jumadi, M M Abdulrasool and S Kumaran View article PDF OPEN ACCESS 012023 Adsorption pattern on the optimization of interaction time for the reduction of phenol with charcoal activated ZnCl₂ S Kristianingrum, A Fillaeli, ED Siswani, Sulistyani and Parwanti PDF View article OPEN ACCESS 012024 Identification and antioxidant activity of phenolic compound from leaves of Scurrula parasitica L Sri Atun, Asri Nur Innayati, HW Herlambang and Sri Handayani View article PDF OPEN ACCESS 012025 Brief review on materials used as carrier agents for larvicide formulations S T S Wong, A Kamari, S N M Yusoff, J Jumadi, M M Abdulrasool, S Kumaran and S Ishak View article PDF OPEN ACCESS 012026 Synthesis and characterization of thymol-loaded lauryl glycol chitosan for pesticide formulation S N M Yusoff, A Kamari, S Ishak, J Jumadi, M M Abdulrasool, S Kumaran and S T S Wong PDF View article OPEN ACCESS 012027

Removal of methylene blue and congo red by magnetic chitosan nanocomposite: Characterization and adsorption studies

J Jumadi, A Kamari, N A Rahim, S T S Wong, S N M Yusoff, S Ishak, M M Abdulrasool and S Kumaran

PDF

View article

OPEN ACCESS Synthesis of b	innessite-type manganese oxide from two different reducing agents via solvent-free method and the catalytic activity in	012028
	FOME	
OPEN ACCESS		012029
The Potential	of Chitosan-TiO ₂ Nanocomposite for Methyl Orange and Rhodamine B Removal	
M M Abdulrasoo	l, A Kamari, S Kumaran, S Ishak, S N M Yusoff, J Jumadi and S T S Wong	
View article	PDF	
OPEN ACCESS		012030
Synthesis, Cha Method	aracterisation and Mechanism of Novel Ca-ZSM-5 Zeolite Nanocomposite from Eggshell using Simple Co-Precipitation	
S Kumaran, A Ka	amari, M M Abdulrasool, S T S Wong, J Jumadi, S N M Yusoff and S Ishak	
View article	PDF	
OPEN ACCESS		012031
Extraction of a	-cellulose from <i>Eleocharis dulcis</i> Holocellulose using NaOH and KOH	
Sunardi, W T Isti	kowati and D I Sari	
View article		
OPEN ACCESS	ia skilla of 'shamistar'? prospective teachers: A study on collaborative learning using Eve modia	012032
N Herefe and D		
OPEN ACCESS		012033
Self-Efficacy o	f Students Senior High School in Problem Based Learning Model of Chemical Equilibrium Topic	
M Handayani an	d ISY Louise	
View article	PDF	
OPEN ACCESS		012034
Development	of Media Three-dimensional (3D) Visualization using Virtual Reality on Chemistry Education	
M Suleman, K H	Sugiyarto and J Ikhsan	
View article		
OPEN ACCESS	migel Literapy on Contact Decod Learning: A Case of Equilibrium Taxia	012035
OPEN ACCESS	nical literacy: A study in chemical bonding	012036
Dessy Lusvana	Yustin and Antuni Wivarsi	
View article	PDF	
OPEN ACCESS		012027
The effect of p rate learning	roblem-based learning model toward students' conceptual understanding and verbal communication skills in reaction	012001

Marsianus Satrio Nangku and Eli Rohaeti

Tiew article

View article

🔁 PDF

OPEN ACCESS		012038
Exploration of	pre-service chemistry teacher's ability in constructing context-based content representation on electrochemistry topic	0.2000
A Wivarsi, H Sutr	risno and E Rohaeti	
OPEN ACCESS		012039
The Effect of a	Macromedia Flash-based Guided Inquiry on Students' Critical Thinking Skill and Self-Regulated Learning	012000
Srireski Jainal ar	nd Isana Supiah Yosephine Louise	
View article	PDF	
		012040
Effects of use 3	3D visualization virtual reality to increase scientific attitudes and cognitive learning achievement	012040
Ika Setiawati A B	akar. K H Sugivarto and J Ikhsan	
OPEN ACCESS		012041
Developing an	android-based application (AVALIMA) for chemical literacy evaluation	
Erfan Priyambod	o, Anggiyani Ratnaningtyas Eka Nugraheni, Antuni Wiyarsi, Dina and Dini Lathifa Husna	
View article	PDF	
OPEN ACCESS	tification of Soveral Orchid Species Record on ORA10 and ORA18 RAPD Marker	012042
	I, LIII Sugiyarto, Evy Yulianti, Heru Nurcanyo and Ixora S. Mercunani	
View article	™PDF	
OPEN ACCESS		012043
Isolation And C	Characterization Of Lactic Acid Bacteria (Lab) From Small Intestine Content Of Duck (Anas Sp.) As A Probiotic	012040
Heru Nurcabyo	Suvanta Abdollah Dale and Fadholi Yudha Alif Eurgon	
View article		
OPEN ACCESS		012044
Detection Stap	hylococcus aureus Producing Enterotoxin A on the Skewers Meatballs Product in Yogyakarta City Indonesia	
T Y Budiarso, G	Prihatmo, R Restiani, S Pakpahan and L Sari	
View article		
OPEN ACCESS		012045
Screening of a	ntimicrobial-producing lactic acid bacteria isolated from traditional fish fermentation against pathogenic bacteria	012045
C Amarantini, D S	Satwika, T Y Budiarso, E R Yunita and E A Laheba	
View article	[™] PDF	
OPEN ACCESS Isolation And C	Characterization Of Fermenting Yeast From Traditional Ethanol Production	012046
Dhira Satwika. S	uhardi Dioioatmodio. Gustin Finnegan. Dhira Puttajaya and Jovita Ivana	
View article	[™] PDF	
OPEN ACCESS The Effectivene Students	ess of Problem Based Learning in Biology with Fishbone Diagram on Critical Thinking Skill of Senior High School	012047
A. A Priyadi and	S. Suyanto	
View article	[™] PDF	
OPEN ACCESS	Real Object and Blended Learning towards Students' Metacognitive Knowledge	012048
	real esjeet and Bionaed Learning towards etadente metalogintive rinowiedge	

A. Musyaddad and S. Suyanto

View article	PDF	
OPEN ACCESS	namila Pasad E Laarning in Environmental Change Material to Enhance Studente' Scientific Literaay Skille	012049
E Astriawati and		
View article		
TPACK Maste	ry of Biology Teachers: A Study Based on Teacher Gender	012050
F. E. C. Astuti, P	aidi, B. Subali, N. Hapsari, S. P. Pradana and M. K. Antony	
View article		
OPEN ACCESS	earning Continuum of the Pedagogic Materials of Genetics Aspects from Elementary School to Senior High School	012051
Level Based o	n the Opinions of Biology Education Experts	
L. Orizasativa, B	. Subali and Paidi	
View article		
OPEN ACCESS		012052
Developing A I Based on The	Learning Continuum of Biological Resources Management Aspect from Elementary School to Senior High School Experts' Opinions	
M. U. Kusumawa	ati, B. Subali and Paidi	
View article		
OPEN ACCESS		012053
Developing A I Education Exp	earning Continuum on Ecological Aspect from Elementary to Senior High School Based on The Opinions of Biology.	0.2000
Mendala, B. Sub	ali and Paidi	
View article		
OPEN ACCESS		012054
Teacher's TPA	CK Profile: The Affect of Teacher Qualification and Teaching Experience	
M. K. Antony, Pa	idi, B. Subali, S. P. Pradana, N. Hapsari and F. E. C. Astuti	
View article		
OPEN ACCESS		012055
The TPACK P	rofile of Biology Teacher Based on Certification Status: A Case Study in Bantul Regency	
N. Hapsari, Paid	i, B. Subali, F. E. C. Astuti, S. P. Pradana and M. K. Antony	
View article		
		012056
C D Dredere D	halysis of High School Biology Teachers in Sragen Regency, Central Java Based on Teacher Certification Status	
S. P. Pradana, P		
OPEN ACCESS	f CPS and SAVI on Riology Learning Media to Improve Student's Linderstanding and Croativity on Environmental	012057
Change Topic		
S. G. N. Sagita a	and T. Aminatun	
View article		
OPEN ACCESS		012058

The Effectiveness of Student Worksheet Development Based on Problem-Based Learning in Respiratory System Material to Improve High School Students' Quantitative Literacy

W. Apriyani and Suhartini

PDF View article OPEN ACCESS 012059 Dual Channel Supply Chain Model with Delivery Lead Time on The Imperfect Production Process by Notice Into Carbon Emission Capacity Regulation A R Yanuarsih, R Setiyowati, Pangadi and Sutanto PDF View article OPEN ACCESS 012060 Estimation of type I censored exponential distribution parameters using objective bayesian and bootstrap methods (case study of chronic kidney failure patients) A Wiranto, A Kurniawan, D A Fitria, Sulivanto and N Chamidah View article PDF OPEN ACCESS 012061 Fuzzy Multi Attribute Decision Making (FMADM) Implementation for Classifying Student's Single Tuition Fee (UKT) Based on Android Applications A W Sugiyarto, R Pamungkas, A R Rasjava and A M Abadi View article PDF **OPEN ACCESS** 012062 Multivariate Adaptive Generalized Poisson Regression Spline (MAGPRS) on the number of acute respiratory infection infants B W Otok, S Hidayati and Purhadi PDF View article OPEN ACCESS 012063 Modeling and hypothesis testing for the factors affecting infant's diarrhea using Generalized Poisson Regression B W Otok, C B G Allo and Purhadi View article PDF **OPEN ACCESS** 012064 Smoothing parameter selection method for multiresponse nonparametric regression model using smoothing spline and Kernel estimators approaches B Lestari, Fatmawati, I N Budiantara and N Chamidah View article PDF OPEN ACCESS 012065 The Infinitely Divisible Characteristic Function of Compound Poisson Distribution as the Sum of Variational Cauchy Distribution D Devianto, Sarah, H Yozza, F Yanuar and Maiyastri PDF View article OPEN ACCESS 012066 Locally stability analysis of the Phytoplankton-Nitrogen- Phosphate-Sediment dynamical system: A study case at Karimunjawa aquaculture system, Central Java E Triyana, Widowati and S P Putro View article PDF **OPEN ACCESS** 012067 Modeling of hypertension risk factors using local linear of additive nonparametric logistic regression E Ana, N Chamidah, P Andriani and B Lestari View article PDF **OPEN ACCESS**

Clustering with spatial constraints: The case of diarrhea in Bandung city, Indonesia

I G N M Jaya, B N Ruchjana, Y Andriyana and R Agata

The existence cleanness	of clean elements in a matrix ring over integral domain and its connections with $g(x)$ -cleanness and strongly $g(x)$ -	012069
IF Ambarsari, S I	rawati, I M Sulandra, H Susanto, A C Y Mui and H Marubayashi	
View article	PDF	
OPEN ACCESS		012070
Power law fluid	model on wave mitigation, 2D simulation using smoothed particle hydrodynamics	
Iryanto, M S Bun	ga, M Mustamiin, I Magdalena and N Erwina	
View article	PDF	
OPEN ACCESS		012071
Modeling Pove	rty Percentages in the Papua Islands using Fourier Series in Nonparametric Regression Multivariable	
N P A M Mariati,	N Budiantara and V Ratnasari	
View article	PDF	
OPEN ACCESS	ovariance matrix using multi response legal polynomial actimator for designing children growth charte: A theoretically	012072
discussion		
N Chamidah and	B Lestari	
View article	PDF	
	of outcome gradient beesting. SARIMA, expensetial emeeting, and poural network models for forecasting rainfall data	012073
R Agata and I G		
OPEN ACCESS		012074
Comparing the Education Insu	Performance of Seasonal ARIMAX Model and Nonparametric Regression Model in Predicting Claim Reserve of rance	
S M Ulyah, M F F	· Mardianto and Sediono	
View article	PDF	
OPEN ACCESS		012075
Probabilistic m probabilistic de	ulti-objective optimization approach to solve production planning and raw material supplier selection problem under mand value	
Sutrisno, P. A. W	icaksono and Solikhin	
View article	PDF	
OPEN ACCESS		012076
Evenly brighter	ning using kurtosis Gaussian pattern to simplify image binarization	
T. M. S. Mulyana	and Herlina	
View article	PDF	
OPEN ACCESS		012077
Evaluation of g	eographically weighted multivariate negative Binomial method using multivariate spatial infant mortality data	
Y S Dewi, Purha	المراجعة علي المراجعة الم	
E view article		
OPEN ACCESS	adjusted deposit insurance on heston model	012078
N Hariati M Yun	is and F.R.M.Putri	

🔁 PDF

View article

View article

🔁 PDF

		012079
what Dimicultie	s that Students working in Mathematical Reasoning Questions?	
A H Zaini and H I	Repart	
View article		
OPEN ACCESS		012080
Why are mathe	matics teachers advised to use blended learning in the learning process?	
Bulan Nuri		
View article	PDF	
OPEN ACCESS		012081
The Profile of .	Junior High School Students' Mathematical Creative Thinking Skills in Solving Problem through Contextual Teaching	
Cholis Sa'dijah, l	Jcik Fitri Handayani, Sisworo, Sudirman, Susiswo, Ety Tejo Dwi Cahyowati and Mukhtamilatus Sa'diyah	
View article		
OPEN ACCESS		012082
The Effect of P	roblem Based Learning on Mathematical Critical Thinking Skills of Junior High School Students	
Fitriana Yolanda		
View article	PDF	
OPEN ACCESS		012083
How to Create	Isomorphic Example-Problem Pairs for Facilitating Analogical Thinking	012005
F M Pastoriko an	id E Retnowati	
View article	PDF	
OPEN ACCESS		012084
The Types and Fong's Method	Factors of Error of Elementary School Students in Solving Mathematical Word Problems: An Analysis Using the	012001
Hikmah Ramdha	ni Putri and Djamilah Bondan Widjajanti	
View article		
OPEN ACCESS		012085
The mathemat PISA adaptatio	ics education department students' ability in mathematical literacy for the change and relationship problems on the In test	012000
Antonius Yudhi A	nggoro, Hongki Julie, Febi Sanjaya, M Andy Rudhito and Dewa Putu Wiadnyana	
View article	[™] PDF	
OPEN ACCESS		012086
Analysis of The Ability	Difficulty of VIIIth Grade Junior High School Students in Circle Material Reviewed from The Mathematics Connection	
Indra Kusuma W	ijayanti and Agus Maman Abadi	
View article		
OPEN ACCESS		012087
The Lost Proce	ess of Mathematical Literacy on Excellent Students at MAN 2 Kudus	0.2001
Lulu Choirun Nis	a and Ainal Inayah	
View article	[™] PDF	
OPEN ACCESS		012088
Exploration of	eachers' "knowledge of students" in study-based teaching on polyhedron material	
Ma'rufi, M Ilyas, I	२ F Pasandaran and Salwah	
View article	[™] PDF	
OPEN ACCESS		012089

Students metacognitive skill in learning mathematics through cooperative based emotional intelligence

M Ilyas, Ma'rufi and F Basir

View article

		040000
How Students	Build Their Mathematical Dispositions towards Solving Contextual and Abstract Mathematics Problems	012090
Mukhtamilatus S	a'diyah, Cholis Sa'dijah, Sisworo and UcikFitri Handayani	
View article	[™] PDF	
OPEN ACCESS		012091
Development of	of student worksheets based on Realistic Mathematics Education (RME) oriented to mathematical reasoning	
N Arsoetar and S	S Sugiman	
View article	PDF	
OPEN ACCESS		012092
A Construct Va	alidity of Spatial Literacy Instrument	
R Anindyarini an	d R Rosnawati	
View article		
OPEN ACCESS	nation Depresentation Difficult for Students?	012093
S Soifwah and L		
View article		
OPEN ACCESS		012094
Improving Stud	dents' Mathematical Literacy Skills Through Multiple Intelligences Approach in Problem Based Learning	
Dini Arrum Putri	and Djamilan Bondan Widjajanti	
View article		
OPEN ACCESS		012095
The characteri	stics of final mathematics test items based on classical test theory	
A T Panjaitan an	d H Retnawati	
View article		
JOURNAL LIN	KS	
Journal home		
Journal Scope		
Information for o	rganizers	
Information for a	uthors	
Contact us		
Reprint services	from Curran Associates	

IOPSCIENCE	IOP PUBLISHING	PUBLISHING SUPPORT
Journals	Copyright 2024 IOP Publishing	Authors
Books	Terms and Conditions	Reviewers
IOP Conference Series	Disclaimer	Conference Organisers
About IOPscience	Privacy and Cookie Policy	
Contact Us	Text and Data mining policy	

Developing countries access

IOP Publishing open access policy

Accessibility

IOP 🛛 🗙 () in 🗖 🍫 🕉 🖌 🙆

The mathematics education department students' ability in mathematical literacy for the change and relationship problems on the PISA adaptation test

Antonius Yudhi Anggoro, Hongki Julie, Febi Sanjaya, M Andy Rudhito, and Dewa Putu Wiadnyana

Sanata Dharma University, Jl. Affandi Tromol Pos 29, Sleman, Yogyakarta 55002 Indonesia

E-mail: hongkijulie@yahoo.co.id

Abstract. One of goals of this research was to describe the mathematics education department students' ability in mathematics literacy for change and relationship problem on Programme for International Students Assessment (PISA) test. The procedures of this research were (1) adapt the PISA test, (2) validate the PISA adaptation test, (3) ask seven students from mathematics education department to solve PISA adaptation test, and (4) describe bachelor students' solution profile. There were (1) three change and relationship problems, (2) four space and shape problems, (3) two uncertainty problems, and (4) four quantity problems. The type of this research is a design research. Subjects of this research were seven bachelor students of mathematics education department. The research results were as follows: (1) level four achieved by one student (14.29%) in problem number 2b.4; (2) level three achieved by (a) six students at problem number 2a, (b) five students at problem number 2b.2; and (c)three students at number 2b.3 and 3; and (3) level two achieved by three students at number 3.

1. Introduction

In the 21st century, human needs 21st century skills for survive. Those skills include critical thinking and problem solving, creativity and innovation, communication and collaboration, flexibility and adaptability, initiative and self-direction, social and cross-cultural, productivity and accountability, leadership and responsibility, and information literacy [1, 2, 3, 4]. One of components that needed to build 21st century skills is mathematical literacy [5]. Mathematical literacy is an individual's ability to identify and understand mathematics role in the world, to make an accurate assessment, use and involves mathematics in various ways to fulfill the individual needs as a reflective, constructive and filial citizen [2, 6].

Unfortunately, mathematical literacy of Indonesian students was not good as expected. It could be seen from Indonesian ranking in PISA test. In 2015, Indonesia achieved ranking 63 from 70 countries and the average score for mathematics is 386. In 2012, Indonesia achieved ranking 65 from 65 countries, and the average score for mathematics is 375 [7, 8].

Content from this work may be used under the terms of the Creative Commons Attribution 3.0 licence. Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI. Published under licence by IOP Publishing Ltd 1

IOP Publishing

PISA test consist of four contents namely (1) the quantity, (2) space and shape, (3) change and relationship, and (4) uncertainty and data [5, 6, 9]. In the PISA test, there are six levels related to mathematical literacy of students [5, 6, 9].

According to Campbell et al., mathematical abilities of primary teachers who teach in the elementary and junior high school are related directly and positively with the students' achievement [10]. It means that a teacher who has good mathematical literacy will impact positively on improving student's mathematical literacy. This result gave idea to us how to improve our students' mathematics ability. If the schools want to improve students' mathematical literacy, they need to improve their teachers' mathematical literacy. It means universities who produced the teacher candidates has an obligation to improve the quality of prospective teachers it produced. How is our teacher's and teacher candidates' mathematical literacy? Do their mathematical literacy is good or not? Unfortunately, research in this area is still limited. So that's why this research is important to do. Because our university as one of universities producing candidate of teachers, we had obligation to know about the students' mathematics literacy and improve it. The one of research aims was to describe mathematics education department students' ability in mathematics literacy for change and relationship problem on PISA adaptation test.

2. Research Methodology

The type of this research was design research. Subjects of this research were seven mathematics education department students. They were chosen randomly from mathematics education department students in one of private university. The goal of this study was achieved by using Akker's design research procedure [11]. There were three steps in the design research, i.e. (1) construct the design, in this research, the researchers constructed the PISA adaptation test, (2) try out the design, in this case, the researchers asked seven mathematics education students to do the test, and (3) do a restrospective analyze, in this case, the researchers analyze the test result base on the three qualitative data analyze steps developed by Miles and Huberman [12]. This procedures was described in the following diagram.



Figure 1. The research procedures

There were four types of the problems in the PISA adaptation test which resulted from this research, i.e. (1) three change and relationship problems, (2) four space and shape problems, (3) two uncertainty problems, and (4) four quantity problems. The language that used in the test is Indonesian, but for the benefit of scientific publications, the test was translated into English.

3. Result and Discussion Problem 1

This graph shows how the speed of a racing car varies along a flat 3 kilometer track during its second lap.



- a. Where was the lowest speed recorded during the second lap?
 A. at the starting line.
 B. at about 0.8 km.
 C. at about 1.3 km.
 D. halfway around the track.
- b. What can you say about the speed of the car between the 2.6 km and 2.8 km marks?
 - A. The speed of the car remains constant. C. The speed of the car is decreasing.

B. The speed of the car is increasing. D. The speed of the car cannot be determined from the graph. Figure 2. The problem 1 in the PISA adaptation test

In the graph, the vertical axes represent car's speed and the horizontal axes represent distance along the track. The deepest valley in the graph indicated the lowest car's speed. In this case, it happened at about 1.3 km. So, the answer of problem 1a is C. At interval (2.6, 2.8), the graph was increasing monotone. It indicated that car's speed increase at that interval. Thus, the answer of problem 1.b is B. Note that all relevant information was given in the problem, and the questions were defined clearly. All subjects could answer both problems correctly. It means, the subjects could answer questions involving familiar contexts where all relevant information [5, 6, 9], the students' mathematics literacy were

classified in the level 1. I. C. Di sokitar janak 1.3 km clani tilik awal. Karena pada grafik sewaktu menurijukkan pala 1.3 km dani tilik awal, gnafiknya mei lebih melengkung kebawah dari pada lengkungan yang lainnya. Dikotahui bahwa somakin rendah lengkunganrya semakin rendah pula kecepatannya. 2. B. Kecepatan mobil meningkat. Karena terlihat pada grafik yang conderung naik atau meningkat kecepatannya. Dikotahui bahwa semakin tinggi grafik semakin cepat pula kecepatannya.

Figure 3. The one example of subjects answer for problem 1

Problem 2

People living in an apartment building decide to buy the building. They will put their money together in such a way that each will pay an amount that is proportional to the size of their apartment. For example, a man living in an apartment that occupies one fifth of the floor area of all apartments will pay one fifth of the total price of the building.

- a. There were three apartments in the building. The largest, apartment 1, has a total area of 95 m². Apartments 2 and 3 have areas of 85 m² and 70 m² respectively. The selling price for the building is 30 billion rupiah. How much should the owner of apartment 2 pay? Show your work.
- b. Circle Correct or Incorrect for each of the following statements:

Statement	Correct / Incorrect	
A person living in the largest apartment will pay more money for each	Correct / Incorrect	
square meter of his apartment than the person living in the smallest		
apartment.		
If we know the areas of two apartments and the price of one of them we	Correct / Incorrect	
can calculate the price of the second.		
If we know the price of the building and how much each owner will pay,	Correct / Incorrect	
then the total area of all apartments can be calculated.		
If the total price of the building were reduced by 10%, each of the owners	Correct / Incorrect	
would pay 10% less.		

Figure 4. The problem 2 in the PISA adaptation test

Generally, all subjects used the same technique using ratio concept to solve this problem. First technique, they counted the total area of the apartment, that is $95 \text{ m}^2 + 85 \text{ m}^2 + 70 \text{ m}^2 = 250 \text{ m}^2$. After that, they used ratio to count the price of apartment 2. They used ratio because the price of the apartment is proportional to the size of the apartment according to the problem. There were five subjects who use this technique.

thanga goclung = 20 Hilyan nuptah Yang hanus di bayan penntihk apartaman I: Apartaman I luasnya 90 m² 1 luasnya 90 m² 1 luasnya 90 m² 1 luasnya 90 m² 1 luasnya 70 m² 1 luasnya 70 m² 1 luasnya 70 m² 1 luasnya 70 m² 1 atau 1.02 milyar ruptah.

Figure 5. One of subject's answer for problem 2a using the first technique

Let us pay attention to the answer in figure 5. Subjects wrote $\frac{85}{250} \times 30M = \frac{85}{250} \times 30000$ juta

.The letter M represents billions in Indonesian. To simplify calculation, subject converted "30 billion" to "30000 juta" and then divided 30000 with 250. "30.000 juta" was not common way to represent 30 billion, but mathematically it is true.

The second technique to solve problem 2a is the subject simplified 95:85:70 by divided it with five. The subject got 19:17:14. After that, subject counted the sum of 19+17+14 = 50 and counted the price of the apartment by using ratio. From the subject's answer, it can say that the subject can interpret agreement between apartment buyer and seller and represent it by using ratio. Thus, six subjects using the first and the second technique were classified by PISA classification [5, 6, 9] in level 3. One another subjects could not solve it.

Subjects answer for problem no 2b.1: All subjects claimed that the statement is correct. This claim is false because everyone would pay the same amount of money for each meter square. This was a consequence of the rule that payment was proportional to the size of apartment. Thus, all students were classified by PISA classification [5, 6, 9] in level 1, becuse they used relevant information but not in the true way.

Subjects answer for problem no 2b.2: Five subjects claimed that the statement is correct. Thus 71.43% subjects were classified by PISA classification [5, 6, 9] in level three because they could communicate their interpretation of given information in the problem, the result of their thinking, and the reason of their answer. Two subjects did not answer the question.

Subjects answer for problem no 2b.3: Three subjects answered "incorrect" for this question. It showed that subjects could communicate their interpretation of given information in the problem, the result of their thinking, and the reason of their answer. Thus, they were classified by PISA classification [5, 6, 9] in level three. Three subjects answered "correct" for this problem. Thus, these students were classified by PISA classification [5, 6, 9] in level three used relevant information but not in the true way. One subject didn't answer the question.

Subjects answer for problem 2b.4: Only one student answered "correct" for this problem. This answer is true. Thus, she was classified by PISA classification [5, 6, 9] in level 4, because she could construct and communicate the reasons why they answer "correct" based on their interpretation of proportional understanding. Four subjects answered "incorrect" and they were classified by PISA classification [5, 6, 9] in level 1, becuse they used relevant information but not in the true way. Two subjects did not answer the question.

Problem 3

In 1998 the average height of both young males and young females in the Netherlands is represented in this graph. According to this graph, on average, during which period in their life are females taller than males of the same age?



Figure 6. The problem 3 in the PISA adaptation test

In above graph, the vertical axis represent high, horizontal axis represent age, the dash line represent average high of young females and straight line represent average high of young males. Three students answered that young females were taller than young males during age period 11 - 13 year. These students were able to execute clearly described procedures, including those that require sequential decisions. They also were able to interpret and use representations based on different information sources and reason directly from them. Thus, they were classified by PISA classification [5, 6, 9] in level three. One student answered that young females were taller than young males during age period 11 - 12 year. One student answered that young females were taller than young males during males during age period 12 - 13 year. One student answered that young females were taller than young males during males when they are 12 year old. These three students were able to extract relevant information from a

single source and make use of a single representational mode. Thus, they were classified by PISA classification [5, 6, 9] in level two. One student answered that young females were taller than young males during age period 11 - 14 year. This student was not able to extract relevant information from a single source and make use of a single representational mode, so this student was classified by PISA classification [5, 6, 9] in level 1.

The following table is the summary of subject's level

Problem	Subject's	Reason	The number	Percentage
	Achievement Level		of subject	
1a	Level 1	Subjects could answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined.	7	100 %
1b	Level 1	Subjects could answer questions involving familiar contexts where all relevant information is present and the questions are clearly defined.	7	100 %
2a	Level 3	Subjects could interpret agreement between apartment buyer and seller and represent it by using worth comparison.	6	85,71 %
	Didn't answer the question	-	1	14.29 %
2b.1	Level 1	-	7	100 %
2b.2	Level 3	they can communicate their interpretation of given information in the problem, the result of their thinking, and the reason of their answer	5	71.43 %
	Didn't answer the question	-	2	28.57 %
2b.3	Level 3	Subjects can communicate their interpretation of given information in the problem, the result of their thinking, and the reason of their answer.	3	42.86 %
-	Level 1	-	3	42.86 %
-	Didn't answer the question	-	1	14.29 %
2b.4	Level 4	Subjects could construct and communicate the reasons why they answer "correct" based on their interpretation of proportional understanding.	1	14.29 %
	Level 1	-	4	57.14 %
	Didn't answer the question		2	28.57 %
3	Level 3	Subjects were able to execute clearly described procedures, including those that require sequential decisions. They also were able to interpret and use representations based on different information sources and reason directly from them.	3	42.86 %
	Level 2	Subjects able to extract relevant information from a single source and make use of a single representational mode	3	42.86 %
-	Level 1	-	1	14.28 %

Table 1. the summary of subject's level

4. Conclusion

According to above results and discussion, we can take some conclusion. Only one or 14.29% subject achieved level four in problem number 2b.4. Six or 85.71 % subjects achieved level three at problem number 2a. Five students or 71.43 % achieved level three at problem number 2b.2. Three subjects achieved level three in the problem 2b.3 and 3. Three subjects achieved level two in the problem three.

From the results of this study, researchers suggest that there needs to be concrete steps from the mathematics education department, to improve mathematical literacy skills of the students. One of steps that can be taken is to change the learning method and evaluation system in the mathematics education department. Learning methods that should be used are no lecturer-centered, but student-centered. The evaluation system with the non-test method in the lecture needs to be increased in frequency of use. If the evaluation system uses a test method, the evaluation questions in the lecture must begin to be improved in quality to be equivalent to the questions in level four, five, and six in PISA calcification.

Acknowledgments

We thank the Ministry of the Research, Technology and Higher Education for funding this research via "Penelitian Strategis Nasional Institusi Tahun 2018" grant distributed through the Sanata Dharma University.

References

- [1] Stacey K 2011 The PISA view of mathematical literacy in Indonesia *Journal Mathematics Education* **2** 95
- [2] Ariyadi W 2016 Students' information literacy: A perspective from mathematical literacy *IndoMS Journal Mathematics Education* **7** 73
- [3] Ojose B 2011 *Mathematics* literacy: Are we able. To put the *mathematics*, we learn into Everyday use? *Journal of Mathematics Education* **4** 89
- [4] Christiansen I B 2006 Mathematical literacy as a school subject: Failing the progressive vision? *Pythagoras* **64** 6
- [5] Julie H and Marpaung Y 2012 PMRI dan PISA: Suatu usaha peningkatan mutu pendidikan matematika di Indonesia *Widya Dharma* **23**
- [6] Julie H 2017 The elementary school teachers' ability in adding and subtracting fraction, and interpreting and computing *International Journal of Science and Applied Science: Conference Series* **1** 55
- [7] OECD 2013 PISA 2012 Results: What students know and can do. Student Performance in mathematics, reading, and science (Paris: OECD)
- [8] OECD 2012 Assessment Framework. Key Competencies in Reading, Mathematics, and Science (Paris: OECD)
- [9] Hongki et all. 2017 The students' ability in mathematical literacy for the quantity, and the change and relationship problems on the PISA adaptation test *IOP Conf. Series: Journal of Physics: Conf. Series* **890** 012089
- [10] Campbell, Patricia F, et. all 2014 The relationship between teachers' mathematical content and pedagogical knowledge, teachers' perceptions, and student achievement *Journal for Research in Mathematics Education* 45 419
- [11] Akker J V D, Gravemeijer K McKenney S and Nieveen N 2006 *Educational Design Research* (New York: Taylor and Francis Group).
- [12] Miles M B and Huberman A M 1994. Qualitative Data Analysis. London: Sage Publications.