

# Kreano

Jurnal Matematika Kreatif-Inovatif

**Volume 12(1)**

**2021, June**

Visit the page:

<https://journal.unnes.ac.id/nju/index.php/kreano/issue/view/1342>

DOI Address:

<https://doi.org/10.15294/kreano.v12i1>

**General Topic:**

**Mathematics Learning and its problem**

*Learning from elementary school to College*

**ISSN by PDII-LIPI,**

p-ISSN. No. 2086-2334 (Print)

e-ISSN. No. 2442-4218 (Online)

Published by

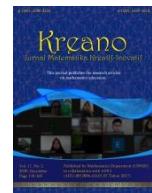
**Mathematics Department of UNNES**

(UNNES JOURNAL as Online Publisher)

*In collaboration with AMLI*

2021





## Preface

Assalamu 'alaikum wr.wb.

Dear readers of the Jurnal Kreano,

**Kreano, Jurnal Matematika Kreatif-Inovatif**, Vol. 12 (1), June 2021 is here to greet loyal readers, academics who have a young spirit in serving, storing, criticizing, and providing solutions to every phenomenon that occurs in learning mathematics through steps the scientific.

The theme of ethnomathematical research is growing and becoming interesting to research. In the CLIL approach, I remember, there are 4Cs that are part of the learning element, and one of the C's is Culture. This means that culture must be an element in learning. In this context, CTL, RME become one of the lessons that are close to culture.

We hope that the quality of national education continues to improve in line with the new policies issued by the government and the academic climate. Hopefully the Kreano Journal together with article writers and readers can be part of the process of improving the quality of national education.

Happy reading!

Wassalamu 'alaikum wr.wb.

Semarang, June, 1<sup>st</sup> 2021  
Chief of Editor

Isnarto, Dr.



**[Editorial Review] Ethnomathematics in Educational research circles****Ardhi Prabowo<sup>1</sup>, Amidi<sup>2</sup>, and Detalia<sup>3</sup>**<sup>1,2,3</sup>Universitas Negeri Semarang

Corresponding Author: ardhiprabowo@mail.unnes.ac.id

**EDITORIAL REVIEW**

The development of ethnomathematical research is currently experiencing a fairly rapid increase in interest. This can be seen in the many ethnomathematical researches in the inaugural issue of Kreano, a creative-innovative mathematics journal, in English. Ethnomathematics in the local context of the Baduy Tribe is well written in 2-stage research, qualitative and development (Arisetyawan et al., 2021). The ethnomathematics published in this edition also includes cultures from Eastern Indonesia. BUNA Traditional Cloth has been described and associated with mathematics learning in schools (Lakapu et al, 2021). Ethnomathematics in the June 2021 edition is getting more complete, because central Indonesia also presents research on Ironwood Tree Metaphor for Trigonometry Learning (Demitra and Dewi, 2021). Although it does not focus on full ethnomathematical research, Mursalina et al have succeeded in developing ethnomathematical-based learning tools (Mursalina et al, 2021).

The ethnomathematical research is developing, and becomes its own color in the June 2021 edition, among research on critical thinking (Mulia et al, 2021), Cognitive style (Wijayanti and Mulyono, 2021), and analysis of students' mathematical representations (Yuliardi et al, 2021). Development research is still quite an idol because the stages and research products are clear. Development research also has advantages: 1) Being able to address real and urgent needs (real needs in the here-and-now) through developing solutions to a problem while generating knowledge that can be used in the future (Borg and Gall, 1989).

In recent years, there have been quite a lot of things being developed by researchers. Some of the development research carried out included: Development of instruments for understanding and reasoning for santri in madrasas (Ismail et al, 2021); media development related to geometry (Susiati et al, 2021) and for low vision (Agustina and Farida, 2021), as well as media development related to STEM (Aprilia et al, 2021). In addition to development research, researchers also raised about scaffolding patterns (Utomo et al, 2021) and even succeeded in revealing the role of laboratory facilities in learning (Sulasteri et al, 2021). Four ethnomathematical studies in a journal issue certainly show the editors that the awareness of researchers connecting local culture with learning is getting stronger. This strength should be further supported by opening wider access to ethnomathematical research.

*Perkembangan riset etnomatematika saat ini mengalami peningkatan minat yang cukup pesat. Hal ini dapat dilihat pada banyaknya riset etnomatematika pada terbitan perdana Kreano, jurnal matematika kreatif-inovatif, dalam Bahasa Inggris. Etnomatematika dalam konteks local Suku Baduy ditulis dengan apik dalam penelitian 2 tahap, kualitatif dan pengembangan (Arisetyawan et al., 2021). Etnomatematika yang dipublish pada edisi ini juga memuat budaya dari Indonesia Timur. Kain Tradisional BUNA dideskripsikan dan dikaitkan dengan pembelajaran matematika di sekolah (Lakapu et al, 2021). Etnomatematika pada edisi Juni 2021 ini semakin lengkap, karena Indonesia bagian tengah juga menyajikan riset tentang Ironwood Tree Metaphor for Trigonometry Learning (Demitra and Dewi, 2021). Walaupun tidak berfokus kepada riset etnomatematika penuh, namun Mursalina et al berhasil mengembangkan perangkat pembelajaran yang berbasis etnomatematika (Mursalina et al, 2021).*

*Riset etnomatematika tersebut berkembang, dan menjadi warna tersendiri dalam edisi Juni 2021, diantara riset tentang berpikir kritis (Mulia et al, 2021), Cognitive style (Wijayanti and Mulyono, 2021), dan analisis representasi matematis siswa (Yuliardi et al, 2021). Riset pengembangan masih cukup menjadi idola karena tahapan dan produk riset yang jelas. Riset pengembangan juga memiliki **kelebihan**: 1) Mampu mengatasi kebutuhan nyata dan mendesak (*real needs in the here-and-now*) melalui **pengembangan** solusi atas suatu masalah sembari menghasilkan pengetahuan yang bisa digunakan di masa mendatang (Borg and Gall, 1989).*

*Pada tahun-tahun terakhir ini, ada cukup banyak hal yang dikembangkan oleh peneliti. Beberapa riset pengembangan yang dilakukan antara lain: Pengembangan instrument untuk pemahaman dan penalaran untuk santri di madrasah (Ismail et al, 2021); pengembangan media terkait geometri (Susiati et al, 2021) dan untuk low vision (Agustina dan Farida, 2021), serta pengembangan media terkait dengan STEM (Aprilia et al, 2021). Selain riset pengembangan, peneliti juga mengungkap tentang scaffolding patterns (Utomo et al, 2021) dan bahkan berhasil mengungkapkan peran fasilitas laboratorium dengan pembelajaran (Sulasteri et al, 2021).*

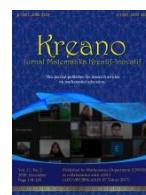
*Empat riset etnomatematika dalam sebuah edisi jurnal tentu menunjukkan pada editor bahwa kesadaran peneliti menghubungkan budaya local dengan pembelajaran semakin kuat. Kekuatan tersebut selayaknya semakin didukung dengan membuka akses penelitian etnomatematika makin luas.*

## REFERENCES

- Agustina, R., & Farida, N. (2021). Braille Geometry Teaching Materials for Low Vision Students. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 63-74
- Aprilia, E., Pujiastuti, H., & Rafianti, I. (2021). Development of Mathematics Learning Media Using STEM Approach to Linear Program Materials. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 164-177
- Arisetyawan, A., Taher, T., & Fauzi, I. (2021). Integrating the Concept of Plane Figure and Baduy Local Wisdom as a Media Alternative of Mathematics Learning In Elementary Schools. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 1-13.
- Borg And Gall, M. D. (1989). Educational research and development is a process used to develop and validate educational product. New York: Longman.
- Demitra, D., & Dewi, U. (2021). Use of Metacognition Questions, Hands-On Activity, and Fantasy Ironwood Tree Metaphor for Trigonometry Learning. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 150-163
- Ismail, I., Nursalam, N., Angriani, A., & Kusumayanti, A. (2021). Development of Measurement Tool for Understanding, Application, and Reasoning Mathematics of Madrasah Ibtidaiyah Students. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 26-38
- Lakapu, M., Uskono, I. V., Jagom, Y. O., Dosinaeng, W. B. N., Leton, S. I., & Djong, K. D. (2021). Mathematics in Culture: Analysis of Mathematical Elements in Buna Woven Fabric. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 75-84.

- Mulia, S., Ikhsan, M., & Duskri, M. (2021). Implementation of Situation-Based Learning Model To Improve The Junior High School Students' Critical Thinking And Self-Regulated Learning Skills. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 14-25.
- Mursalina, D., Marhamah, M., & Retta, A. (2021). Development Students Worksheet Using Ethnomathematics-based CTL Approach on SLETV Subject Material for Grade X. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 118-129
- Sulasteri, S., Nur, F., & Suharti, S. (2021). The Effect of Computer Laboratory Facilities and Learning Interest on Students' Learning Outcomes. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 97-106.
- Susiaty, U., Prihatin, I., & Hartono, H. (2021). Developing and Playing Geometric Puzzle Game to Enhance the Ability of Mathematical Creative Thinking. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 39-50
- Utomo, D., Irawati, N., & Kamil, T. (2021). Mathematics Teacher's Scaffolding Patterns Applied to Cooperative Learning Settings to Facilitate Students' Problem Solving. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 51-62
- Wijayanti, K., & Mulyono, M. (2021). The Coherence of Group Scheme of the High Initial Ability Students Based on Cognitive Style. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 130-149
- Yuliardi, R., Juandi, D., Maizora, S., & Mahpuddin, A. (2021). Analysis of Students' Mathematical Representation Skills through Android Application-based Mathematics Learning. *Kreano, Jurnal Matematika Kreatif-Inovatif*, 12(1), 178-188





### Table of Content

Title.....	i
Preface .....	iii
Editorial Review .....	v
Table of Content .....	ix
1. Integrating the Concept of Plane Figure and Baduy Local Wisdom as a Media Alternative of Mathematics Learning In Elementary Schools. <i>Andika Arisetyawan, Tarmizi Taher, Irfan Fauzi ....</i>	1-13
2. Implementation of Situation-Based Learning Model To Improve The Junior High School Students' Critical Thinking And Self-Regulated Learning Skills. <i>Siti Mulia, M. Ikhsan, M Duskri....</i>	14-25
3. Development of Measurement Tool for Understanding, Application, and Reasoning Mathematics of Madrasah Ibtidaiyah Students. <i>Ilyas Ismail, Nursalam, Andi Dian Angriani, Andi Kusumayanti .....</i>	26-38
4. Developing and Playing Geometric Puzzle Game to Enhance the Ability of Mathematical Creative Thinking. <i>Utin Desy Susiyati, Iwit Prihatin, Hartono .....</i>	39-50
5. Mathematics Teacher's Scaffolding Patterns Applied to Cooperative Learning Settings to Facilitate Students' Problem Solving. <i>Dwi Priyo Utomo, Nurul Irawati, Tika R Kamil .....</i>	51-62
6. Braille Geometry Teaching Materials for Low Vision Students <i>Rina Agustina, Nurul Farida .....</i>	63-74
7. Mathematics in Culture: Analysis of Mathematical Elements in Buna Woven Fabric. <i>Meryani Lakapu, Irmina Veronika Uskono, Yohanes Ovaritus Jagom, Wilfridus Beda Nuba Dosinaeng, Samuel Igo Leton, Kristoforus Djawa Djong .....</i>	75-84
8. Mathematical Problem Solving Ability of SMP 1 Kelekar Students Analized Based on Student Learning Motivation. <i>Hardian Mei Fajri, Misdalina Misdalina, Nila Kesumawati .....</i>	85-96
9. The Effect of Computer Laboratory Facilities and Learning Interest on Students' Learning Outcomes. <i>Sri Sulasteri, Fitriani Nur, Suharti .....</i>	97-106
10. Didactic Design of Lesson Study-based Microteaching Learning for Prospective Mathematics Teacher Students. <i>Rika Sukmawati, Kus Andini Purbaningrum .....</i>	107-117
11. Development Students Worksheet Using Ethnomathematics-based CTL Approach on SLETV Subject Material for Grade X. <i>Ditya Mursalina, Marhamah, Allen Marga Retta .....</i>	118-129
12. The Coherence of Group Scheme of the High Initial Ability Students Based on Cognitive Style. <i>Kristina Wijayanti, Mulyono .....</i>	130-149
13. Use of Metacognition Questions, Hands-On Activity, and Fantasy Ironwood Tree Metaphor for Trigonometry Learning. <i>Demitra, Ummi Fortuna Dewi .....</i>	150-163
14. Development of Mathematics Learning Media Using STEM Approach to Linear Program Materials. <i>Eka Aprilia, Heni Pujiastuti, Isna Rafianti .....</i>	164-177
15. Analysis of Students' Mathematical Representation Skills through Android Application-based Mathematics Learning. <i>Ricki Yuliardi, Dadang Juandi, Syafdi Maizora, Asep Mahpudin .....</i>	178-188
Author Index .....	x
Manuscript Template .....	xi
Subscription Page .....	xv