

ISSN: 2442-3750 (print)
ISSN: 2527-6204 (online)

JPBI (JURNAL PENDIDIKAN BIOLOGI INDONESIA)

JPBI	Volume 4	Number 3	Pages 195-276	Malang November 2018	ISSN: 2442-3750 (print) ISSN: 2527-6204 (online)
-------------	----------	----------	------------------	-------------------------	---

Published by:
University of Muhammadiyah Malang, Indonesia
Collaborate with:
Asosiasi Lesson Study Indonesia (ALSI)

ISSN: 2442-3750 (print)
ISSN: 2527-6204 (online)
Volume 4, Issue 3, November 2018

JPBI (Jurnal Pendidikan Biologi Indonesia), ISSN 2442-3750 (print), ISSN 2527-6204 (online), is published by Department of Biology Education, Faculty of Teacher Training and Education, University of Muhammadiyah Malang collaborates with Asosiasi Lesson Study Indonesia (ALSI)/Indonesian Association of Lesson Study. JPBI (Jurnal Pendidikan Biologi Indonesia) publishes a scientific papers on the results of the study/research and review of the literature in the sphere of biology education in primary education, secondary education, and higher education. Additionally, this journal also covers the issues on environmental education. Editors welcome scholars, researchers, and practitioners of education around the world to submit scholarly articles to be published through this journal. All articles will be reviewed by experts before accepted for publication. Each author is solely responsible for the content of published articles.

Editors accept the article has not been published in other media with the writing format as listed on page manuscript writing guidelines. The journal has been indexed in DOAJ, Google Scholar, DOI Crossref, SINTA, and others. JPBI (Jurnal Pendidikan Biologi Indonesia) was established in 2015, published three times a year, on March, July, and November. Started by Volume 3, Number 3, November 2017, the journal was only published by using one language namely English. JPBI (Jurnal Pendidikan Biologi Indonesia) in English is *Indonesian Journal of Biology Education*.

Editor-in-Chief

Dr. Atok Miftachul Hudha, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia

Managing Editors

1. *Husamah*, Scopus ID: 57195803428; Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
2. *Diani Fatmawati*, Scopus ID: 57188975423; Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia

Section Editors

1. *Assoc. Prof. Dr. Anthony Kudjo Donkor*, Scopus ID: 55794169000; University for Development Studies, Tamale, Ghana
2. *Dr. Arsad Bahri*, Scopus ID: 56857333400; Department of Biology, State University of Makassar (UNM), South Sulawesi, Indonesia
3. *Dr. Elly Purwanti*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
4. *Alisa Kazarina*, Scopus ID: 56580516500; Latvian Biomedical Research and Study Centre & University of Latvia, Latvia
5. *Rio Christy Handziko*, Scopus ID: 57195469269; Department of Biology Education, State University of Yogyakarta (UNY), Yogyakarta, Indonesia
6. *Dwi Setyawan*, Scopus ID: 55140509000, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
7. *Ahmad Fauzi*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
8. *Fendy Hardian Permana*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
9. *Fuad Jaya Miharja*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
10. *Tutut Indria Permana*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia

Proofreaders

1. *Prof. Ruhul Haque Kuddus*, Scopus ID: 6603847273; Department of Biology, Utah Valley University, United States
2. *Prof. Dr. Maria Del Carmen Nolasco Salcedo*, Departamento de ciencias Básicas, Centro Universitario de la Ciénege, Universidad de Guadalajara, Ocotlán, Jalisco, Mexico
3. *Dr. Shahin Gavanji*, Scopus ID: 54883969200; Chairman of World Academic of Medical Sciences (WAMS); Department of Biotechnology, Faculty of Advance Sciences and Technologies, University of Isfahan, Isfahan, Iran, Islamic Republic of
4. *Roimil Latifa*, Scopus ID: 57188978530; Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia

Reviewers

1. *Assoc. Prof. Dr. Muhammad Faizal A. Ghani*, Scopus ID: 49861280500; Department Of Educational Management, Planning, and Policy Faculty Of Education, University of Malaya, Kuala Lumpur, Malaysia
2. *Assoc. Prof. Dr. Maria Salih*, Scopus ID: 56574813200; Fakulti Pendidikan & Pembangunan Manusia, Sultan Idris University of Education, Perak Darul Ridzuan, Malaysia
3. *Assoc. Prof. Christina Albert Rayed*, Scopus ID: 36701785600; Computer and Information System Department; Sadat Academy for Management Science, Cairo, Egypt
4. *Prof. Dr. Nuryani Y Rustaman*, Scopus ID: 55872695700; Science Education Departement, Indonesia University of Education (UPI), West Java, Indonesia
5. *Prof. Dr. Agr. Mohamad Amin*, Scopus ID: 57188826265; Department of Biology Education, State University of Malang (UM), East Java, Indonesia
6. *Dr. Ainur Rofieq*, Scopus ID: 57188989237; Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
7. *Dr Andreas Priyono Budi Prasetyo*, Scopus ID: 57194028412; Biology Education Department, Semarang State University (UNNES), Central Java, Indonesia
8. *Dr. Anggi Tias Pratama*, Scopus ID: 57191420208; Department of Biology Education, Islamic State University of North Sumatera (UIN-SU), North Sumatera, Indonesia
9. *Dr. Ahmad Muhlisin*, Scopus ID: 57191473660; Natural Science Education Program, Tidar University, Magelang Central Java, Indonesia
10. *Dr Baiq Fatmawati*, Scopus ID: 57200103296; Department of Biology Education, University of Hamzanwadi, West Nusa Tenggara, Indonesia
11. *Dr. Cicilia Novi Primiani*, Scopus ID: 57202377460; Department of Biology Education, University of PGRI Madiun, East Java, Indonesia
12. *Dr. Didimus Tanah Boleng*, Scopus ID: 57194721482; Department of Biology Education, University of Mulawarman, East Kalimantan, Indonesia
13. *Dr. Lina Listiana*, Scopus ID: 57190276357; Department of Biology Education, University of Muhammadiyah Surabaya, East Java, Indonesia
14. *Dr Marheny Lukitasari*, Scopus ID: 57201676274; Department of Biology Education, University of PGRI Madiun, East Java, Indonesia
15. *Dr. Mia Nurkanti*, Scopus ID: 57200340681; Department of Biology Education, Pasundan University, Bandung, West Java, Indonesia
16. *Dr. Murni Ramli*, Scopus ID: 57193454536; Department of Biology Teacher Education, Sebelas Maret University (UNS), Central Java, Indonesia
17. *Dr. Nurul Mahmudati*, Scopus ID: 57188981985; Department of Biologi Education, University of Muhammadiyah Malang, East Java, Indonesia
18. *Dr. Poncojari Wahyono*, Scopus ID: 57188978455; Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
19. *Dr. Siti Sriyati*, Scopus ID: 57193863534; Science Education Department, Indonesia University of Education (UPI), West Java, Indonesia
20. *Dr. Sri Wardhani*, Scopus ID: 57199258173; Department of Biology Education, University of Muhammadiyah Palembang, South Sumatera, Indonesia
21. *Dr. Sumar Hendayana*, Scopus ID: 15753460100; Department of Science Education, Indonesia University of Education (UPI), and Head of Asosiasi Lesson Study Indonesia/ALSI (Indonesian Association of Lesson Study), West Java, Indonesia
22. *Dr. Yuni Pantiwati*, Scopus ID: 57190660805; Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
23. *Dr. Abdulkadir Rahardjanto*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia

24. *Dr. Agus Sutanto*, Department of Biology Education, University of Muhammadiyah Metro, Lampung, Indonesia
25. *Dr Akhmad Sukri*, Department of Biology Education, Institute of Teacher Training and Education (IKIP) Mataram, West Nusa Tenggara, Indonesia
26. *Dr. Bonita Hirza*, Department of Mathematics Education, University of Muhammadiyah Palembang, South Sumatera, Indonesia
27. *Dr. Eko Susetyarini*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
28. *Dr. Handoko Santoso*, Department of Biology Education, University of Muhammadiyah Metro, Lampung, Indonesia
29. *Dr. In Hindun*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
30. *Dr. Lud Waluyo*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
31. *Dr Marhamah*, Department of Biology Education, Hamzanwadi University, West Nusa Tenggara, Indonesia
32. *Dr. Moch. Agus Krisno Budiyanto*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
33. *Dr. Muhfahroyin*, Department of Biology Education, University of Muhammadiyah Metro, Lampung, Indonesia
34. *Dr. Rusdy A. Siroj*, Department of Mathematics Education, University of Muhammadiyah Palembang, South Sumatera, Indonesia
35. *Dr. Saleh Hidayat*, Department of Biology Education, University of Muhammadiyah Palembang, South Sumatera, Indonesia
36. *Dr. Siti Ramdiah*, Biology Education Study Program, School of Teacher Training and Education (STKIP) of PGRI Banjarmasin, South Kalimantan, Indonesia
37. *Dr Sri Murni Soenarno*, Department of Biology Education, Indraprasta PGRI University, Jakarta, Indonesia
38. *Dr. Suhirman*, Department of Biology Education (Tadris), Islamic State University (UIN) of Mataram , West Nusa Tenggara, Indonesia
39. *Dr. Sukarsono*, Department of Biology Education, University of Muhammadiyah Malang, East Java, Indonesia
40. *Dr. Trikinasih Handayani*, Department of Biology Education, University of Ahmad Dahlan, Yogyakarta, Indonesia
41. *Dr. Yetty Hastiana*, Department of Biology Education, University of Muhammadiyah Palembang, South Sumatera, Indonesia

Editorial Office

Department of Biology Education, Faculty of Teacher Training and Education,
 University of Muhammadiyah Malang; 3rd Campus, 1st Floor, BioEdu Room, Tlogomas Street No. 246 Malang,
 East Java, Indonesia; Postal Code: 65144; Phone: +62341- 464318 Ext.120 Fax: 0341- 460782;
 E-mail: jpbi@umm.ac.id / journal.educationalbiology@gmail.com;
 Website: <http://ejournal.umm.ac.id/index.php/jpbi>

TABLE OF CONTENT

Facts and proofs diagnostic test and structural communication grid test on the topic of bacteria: A quantitative analysis <i>Chaerul Novitasari, Murni Ramli, Puguh Karyanto</i>	195
Self-efficacy and motivation: Improving biology learning outcomes of senior high school students <i>Fahmie Firmansyah, Ratna Komala, Rusdi Rusdi</i>	203
Developing of guided inquiry-based biochemistry practicum guidebook <i>Diyah Ayu Widyaningrum, Titik Wijayanti</i>	209
The implementation of school-literacy-movement: Integrating scientific literacy, characters, and HOTS in science learning <i>Evi Suryawati, Fitra Suzanti, Suwondo Suwondo, Yustina Yustina</i>	215
Developing mobile learning as ecology practical tool using three-layer observation framework <i>Rizki Agung Sambodo, Baskoro Adi Prayitno, Puguh Karyanto, Eka Sulistyowati</i>	225
Developing flash media of Quranic-based human reproduction system material <i>Arif Didik Kurniawan, Nuri Dewi Muldayanti, Banita Eka Putri</i>	235
Scientific process skills: Preliminary study towards senior high school student in Palembang <i>Tri Eka Andini, Saleh Hidayat, Ety Nurmala Fadillah, Tutut Indria Permana</i>	243
Scene setting activities: One of students' learning motivation factor <i>Ansar Ansar, Ahmad Afif, Eka Damayanti</i>	251
SETS-based guided experiment book: Empowering science process skills of elementary school students <i>Pinkan Amita Tri Prasasti, Ivayuni Listiani</i>	257
Cultivating students' environmental awareness by creating bottle garden in school: A qualitative study <i>Risya Pramana Situmorang, Sari Dewi Tarigan</i>	263
Improving students learning motivation through mobile learning <i>Alfiana Monika Sari, Heru Nurcahyo</i>	271