

LAMPIRAN I
PEDOMAN WAWANCARA LAPANGAN

Nomor	Pertanyaan	Tanggapan Responden
1	Bagaimana pandangan saudara tentang bencana?	
2	Bagaimana bentuk-bentuk bencana atau pengetahuan tentang bencana lokal (daerah saudara tinggal)?	
3	Bagaimana upaya-upaya yang dilakukan untuk mengurangi risiko bencana?	
4	Bagaimana peran upacara (<i>yadnya</i>) dalam mengurangi risiko bencana?	
5	Bagaimana bentuk kearifan lokal (adat, kebiasaan, teknik dan cara) dalam mengurangi risiko bencana?	
6	Bagaimana proses mendapatkan pengetahuan atau pemahaman pengurangan risiko bencana?	



LAMPIRAN 2
PEDOMAN OBSERVASI POLA DAN LINGKUNGAN RUMAH

No	Objek	Hasil
1	Bangunan: a. Nama bangunan b. Fungsi c. Struktur (material, pondasi, dinding, rangka, atap)	
2	Orientasi: a. Posisi b. Fungsi	



LAMPIRAN 3
KUTIPAN CERITA KEBENCANAAN

a. *Widdhi Satra Roga Sanghara Bhumi*¹:

“Larapanjang jagat rusak paduka bhatara kalih ndya ta, bhatara Druwarsi malingga during akasa, Sang Hyang Anantha Sana ring sapta patala pada duhkita ring sang manggwanda bhuwana, tkaning kālī sangara bhumi, Brāhma amurti sarwa bhuta, pisacasanā, dumadi manusa, orang ikang rāt, tanpa tutur ikang wwang, hampehpehan lawan panak, sang taskara galak, asing wwang amada madaning twan, pramada ring sang dharma, mwah sapari tkaning bhumi rusak sarwa sato tan pinaka laki-lakinya, mwah salah rupā, salah wtu mwang sang sadhaka pralaya tan pakahingan, wwang apaten paten, lindu titir, wwang salah laki-lakinya tan kētengēr dening wwang, mantra tan mandi, wisya, rana, letuh ikang bhumi macampuh tkeng rasattala, dukha Sanghyangnanta bhogga katapak gigir ira, olih wwang kasmala, mapanes gigir ira, molah untut ira, kumeter ikang jagat, hangajar aken ala ayuning jagat, mwang Sanghyang duhu dewata kabēh, sira huriping dewata kabeh, sira humidēr lakuning Sanghyang Aditya ring akasa hangetan hangulwan sadhāakala, dukha sirā ngtong ikang rat, haēp amurakēn bwana manusa ring sasattala, angganya dewata madēg ring madya loka”.

Artinya: “Yang menyebabkan dunia rusak tersebutlah dua Bhatara yaitu Bhatara Druwarsi berstana di atas angkasa, Sanghyang Anantasana di bawah tanah, marah kepada manusia yang menghuni dunia, datangnya jaman

¹ I Made Girinata, I Gede Rudia Adiputra dan I Gusti Made Widya Sena. *Linuh dalam Teks Palalindon: Perspektif Sosiologis Umat Hindu di Bali*. (2016) <http://sim.ihdn.ac.id/app-assets/repo/repo-dosen-261908013850-76.pdf>

kehancuran dunia, Brahma menjadi semua bhuta, pisacasana, menjadi manusia, kacau dunia itu, tanpa ajaran manusia itu berselisih dengan anak, para penjahat mengganas, semua manusia menyamai penguasa, mencela rohaniawan, dan pertandanya dunia rusak, semua binatang tak sewajarnya pejantannya, dan salah bentuk, salah kelahirannya dan para rohaniawan wafat tak terhingga, manusia saling bunuh-membunuh, linuh (gempa) sering terjadi, manusia tak wajar pasangannya tidak diketahui oleh manusia berhati rakus, mantra tidak bertuah, penyakit, hama, kotor dunia itu, bercampur aduk sampai ke bawah tanah, marahlah Sang Hyang Ananta Bhoga punggungnya diikat oleh orang kotor, panaslah punggungnya, bergeraklah ekornya, bergetarlah dunia, member tanda baik buruknya dunia, dan Sanghyang Duhuring Akasa yaitu Bhatara Druwarsi, beliau pimpinan para dewata, beliau jiwanya para dewata, beliau berkeliling sebagai gerakan Sanghyang Aditya/Matahari di angkasa, ke timur ke barat setiap saat marah beliau melihat dunia, bermaksud beliau untuk menghancurkan manusia di dunia, badannya dewatalah yang menempati dunia.

b. Cerita Naga Gombang:

Raden Mantri yang berkedudukan di kerajaan Daha dan mengambil istri di kerajaan Kahuripan yaitu Raden Galuh. Dikisahkan perkawinan mereka sudah cukup lama, maka inginlah Raden Mantri untuk berjalan-berjalan/bersenang-senang ke hutan bersama permaisurinya menghibur dirinya yang saat itu diliputi oleh kekalutan. Akhirnya sepakatlah mereka berdua untuk melakukan perjalanan menuju gunung. Diceritakan ada seekor naga (Naga Gombang) bertelur dikaki sebuah bukit. Tersebutlah saat itu para dewa sedang membikin

dunia (jagat raya ini), yang saat itu baru berbentuk kental saja. Dan para dewa saat itu kurang satu sarana yang dipakai untuk kancingnya dunia (jagat ini). Diceritakanlah sekarang Raden Mantri yang mempunyai nasib malang menjumpai telur naga itu dan berniat keras untuk menikmari, dan akhirnya telur itu dipungut untuk dibawa pulang, pada saat akan mengambil mereka berdua sudah mempunyai firasat buruk. Setibanya di rumah telur itu dimasak oleh permaisurinya, setelah masak telur itu diserahkan kepada Raden Mantri, saat akan makan telur itu Raden Mantri berpesan pada permaisurinya supaya tidak ikut memakan. Dengan maksud apabila Raden Mantri akan di timpa musibah supaya permaisurinya tidak ikut kena. Permaisurinya itu menyetujui dan akhirnya telur itu dimakan oleh Raden Mantri. Setelah itu jadilah beliau seekor naga yang besar, bersisik dengan nama Naga Gombang yang nantinya akan menjadi kancing dunia. Pada saat beliau akan meninggalkan permaisurinya untuk menjadi kancing dunia, terlebih dahulu beliau berpesan kepada permaisurinya, Raden Mantri mohon agar permaisurinya mengikuti ke sanggar kemulan berputar sebanyak tiga (3) kali. Berkatalah Raden Mantri “wahai permaisuriku lihatlah kakak akan masuk ke dalam tanah, di sisi tiang sanggar kemulan ini, terus ke bawah sebagai kancing dunia. Permaisurinya menjawab “ya kak”, begitu pula beliau berpesan sama permaisurinya apabila nanti ada linuh (dunia ini bergetar) itu adalah tidak lain bahwa kakak yang menyebabkan. Apabila badan kakak yang bergetar, itu namanya ketug. Dan apabila bulu badan kakak yang bergetar bahwa itu linuh namanya. Semua itu adalah karena kakak merasa kepanasan di bawah tanah dan diinjak-injak. Raden Mantri juga

berpesan pada permaisurinya apabila ada seseorang perempuan yang sedang hamil untuk pertama kalinya (*ayunan dana*), terus ada linuh (getaran dunia) supaya segera ke sanggar kemulan dengan memegang tiang (saka) dan terlungkup di tanah sambil mencium tanah tiga (3) kali, setelah itu baru berteriak hidup...hidup...hidup...Jadi dengan berteriak demikian kakak sudah mendengar bahwa adik bersama rakyat semua minta keselamatan, dan supaya adik dapat kiranya nasehat ini diwarisi turun-tumurun dari masyarakat khususnya masyarakat Hindu. Akhirnya beliau masuk ke dalam tanah sembari berbisik bahwa ini memang sudah kehendak Hyang Maha Kuasa.



LAMPIRAN 4 ANALISIS ARTIKEL

a. Analisis tema

Kode Artikel	Analisis Deskriptif	Tema
A1 ²	Menguji pengaruh model pembelajaran tematik bervisi SETS terhadap pemahaman materi kebencanaan di Sekolah dasar. Materi kebencanaan yang diberikan terdiri dari tiga kompetensi (mitigasi, adaptasi dan tanggung jawab) sebagai pelengkap dari Kompetensi Inti dan kompetensi dasar pada tema 9 dan sub tema 2 kelas V. Lokasi penelitian pada empat Sekolah dasar kawasan rawan bencana gempa Bantul, Yogyakarta dengan rancangan penelitian <i>quasi</i> eksperimen. Hasil penelitian menunjukkan terdapat peningkatan pemahaman materi kebencanaan yaitu pada aspek mitigasi, adaptasi dan tanggung jawab.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A2 ³	Metode pembelajaran kebencanaan berbasis kolaborasi dengan komunitas sekolah dengan pembelajaran di kelas dan luar kelas (wawancara masyarakat sekitar tentang pengalaman langsung saat menghadapi bencana). Topik yang digunakan adalah menghadapi letusan Gunung Merapi dengan mengintegrasikan dalam pembelajaran Bahasa Indonesia kelas VI. Lokasi penelitian di Sekolah dasar negeri 1 Banaran Cangkringan Sleman Yogyakarta yang merupakan kawasan rawan bencana letusan gunung Merapi.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (erupsi) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)

² Setyo Eko Atmojo *et al.* *SETS (Science, Environment, Technology, and Society) Vision Thematic Learning Model in Improving Disaster Material Understanding of Elementary School Students.* (Universal Journal of Educational Research, Volume 8, Nomor 2, 2020), hh. 6919-6924. <https://www.hrpub.org/download/20201130/UJER58-19517403.pdf>

³ Tuswadi dan Hayashi Takehiro. *School-community collaboration in disaster education in a primary school near Merapi volcano in Java Island.* (AIP Conference Proceedings 1730, 090001, 2016). <https://doi.org/10.1063/1.4947418>

A3 ⁴	Penerapan <i>Problem Based Learning</i> (PBL) dengan materi siaga bencana gempa untuk mengukur kemampuan literasi sains siswa kelas IV. Pembelajaran tematik yang digunakan pada tema 8 Daerah Tempat Tinggalku, subtema 1 Lingkungan Daerah Tempat Tinggalku, pembelajaran 1. Literasi sains yang diukur adalah: komponen sikap saintifik, komponen konteks, komponen pengetahuan dan komponen kompetensi sains. Lokasi penelitian pada Sekolah dasar di Kota Bengkulu	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A4 ⁵	Pelaksanaan Program Pengurangan Resiko Bencana (PRB) terintegrasi ke dalam pembelajaran tematik menggunakan model <i>Problem Based Learning</i> (PBL) berbasis ICT untuk mengembangkan sikap, pengetahuan dan keterampilan siaga bencana gempa siswa SD. Lokasi penelitian pada Sekolah dasar di Kota Bengkulu. Hasil penelitian menunjukkan pengaruh nyata peningkatan sikap, pengetahuan, dan keterampilan siaga bencana gempa bumi bagi siswa kelas IV.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A5 ⁶	Analisis kebutuhan pengembangan model pembelajaran mitigasi bencana gempa bumi berbasis permainan tradisional Bengkulu (<i>Cici Gandung</i>) yang diintegrasikan dalam pembelajaran tematik terpadu untuk siswa Sekolah dasar. Tema yang sesuai digunakan dalam pembelajaran ini yaitu Daerah Tempat Tinggalku dengan subtema, yaitu	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)

⁴ Rizqa Dwi Shofiya Maghfira Izzania et al. Pengaruh Penggunaan Model *Problem Based Learning* pada Materi Siaga Bencana terhadap Kemampuan Literasi Sains Siswa Kelas IV SD Negeri Kota Bengkulu. (*Juridikdas: Jurnal Riset Pendidikan Dasar*, Volume 3, Nomor 3, 2020), hh. 381-390. <https://ejournal.unib.ac.id/index.php/juridikdasunib/article/view/14568>

⁵ Endang Widi Winarni. Pengaruh Pelaksanaan Program Pengurangan Risiko Bencana Terintegrasi Menggunakan Model *Problem Based Learning* Berbasis ICT Bagi Siswa Kelas IV SD IT IQRA' 1 di Kota Bengkulu. (*JINoP: Jurnal Inovasi Pembelajaran*, Volume 2, Nomor 2, 2016), hh. 351-359. <https://doi.org/10.22219/jinop.v2i2.2626>

⁶ Panut Setiono et al. Analisis Kebutuhan Pengembangan Model Pembelajaran Pengetahuan Mitigasi Bencana Gempabumi Berbasis Permainan Tradisional Bengkulu. (*Geodika: Jurnal Kajian Ilmu dan Pendidikan Geografi*, Volume 5, Nomor 1, 2021), hh. 1-10. <https://doi.org/10.29408/geodika.v5i1.2975>

	Peristiwa Alam di Sekitar Tempat Tinggalku, Budaya Daerah di Tempat Tinggalku, Kehidupan Sosial di Tempat Tinggalku, Lingkungan Alami Tempat Tinggalku, Kenampakan Alam Tempat Tinggalku, Kehidupan Alam di Sekitar Tempat Tinggalku.	
A6 ⁷	Uji pengembangan model pembelajaran mitigasi bencana letusan gunung api, banjir dan gempa bumi yang terintegrasi dalam pembelajaran IPS. Lokasi penelitian pada sekolah dasar di kawasan rawan bencana gempa dan letusan gunung Merapi Yogyakarta. Hasil uji menunjukkan keefektifan model dalam meningkatkan keterampilan mitigasi dan hasil belajar siswa.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa dan erupsi) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A7 ⁸	Mengukur perilaku siaga bencana siswa sekolah dengan simulasi bencana gempa menggunakan <i>role play</i> dan video animasi kesiapsiagaan bencana. Lokasi penelitian pada SD Muhammadiyah Tonggalan Klaten, Jawa tengah	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A8 ⁹	Simulasi evakuasi bencana gunung Meletus pada siswa SD untuk mengukur gambaran kesenangan dan motivasi belajar. Lokasi kegiatan di SD negeri 3 Tirtomarto Ampelgading Kabupaten Malang (Kawasan rawan bencana letusan gunung Semeru). Mayoritas responden senang dan termotivasi mengikuti simulasi bencana.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (erupsi) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)

⁷ Setyo Eko Atmojo *et al.* *Natural Disaster Mitigation through Integrated Social Learning Science in Primary School.* (*Asian Social Science*, Volume 13, Nomor 1, 2017). <http://dx.doi.org/10.5539/ass.v13n1p161>

⁸ Fitri Suciana dan Devi Permatasari, *Pengaruh Edukasi Audio Visual dan Role Play Terhadap Perilaku Siaga Bencana Pada Anak Sekolah Dasar.* (*Journal of Holistic Nursing Science*, Volume 6, Nomor 2, 2019), hh. 44-51. <https://doi.org/10.31603/nursing.v6i2.2543>

⁹ Hardiyanto. *Gambaran Kesenangan Dan Motivasi Belajar Siswa Sekolah Dasar Kelas IV Dan V Di SDN Tirtomarto Ampelgading Dalam Mengikuti Simulasi Evakuasi Bencana Gunung Meletus.* (*Jurnal Kesehatan Mesencephalon*, Volume 5, Nomor 2, 2019), hh. 120-126. <http://dx.doi.org/10.36053/mesencephalon.v5i2.148>

A9 ¹⁰	Metode simulasi siaga bencana gempa bumi terhadap kesiapsiagaan siswa SD di kelurahan Giwangan Yogyakarta. Instrumen yang digunakan adalah media film simulasi siaga bencana.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A10 ¹¹	Pendidikan mitigasi bencana letusan gunung Kelud dengan metode simulasi yang disisipkan dalam pelajaran IPS Sekolah dasar Kelas IV. Lokasi penelitian yaitu pada Sekolah dasar kawasan rwan letusan gunung Kelud Kediri, Jawa Timur. Hasil penelitian menunjukkan terdapat perbedaan signifikan antara metode simulasi dengan non simulasi.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (erupsi) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A11 ¹²	Penerapan metode simulasi dan video animasi untuk mengukur pengetahuan kesiapsiagaan siswa SD dalam bencana letusan gunung api. Lokasi penelitian di SD Kawasan rawan bencana letusan gunung api Gamalama. Hasil penelitian menunjukkan pengetahuan kesiapsiagaan siswa meningkat setelah diberikan simulasi dan video animasi.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (erupsi) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A12 ¹³	Multimedia interaktif sebagai media pembelajaran mitigasi bencana gempa untuk siswa SD. Media ini berisi tentang mitigasi sebelum, saat dan sesudah gempa terjadi.	<ul style="list-style-type: none"> • Bentuk: integrasi media • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)

¹⁰ Fika Nur Indriasari. *Pengaruh Pemberian Metode Simulasi Siaga Bencana Gempa Bumi terhadap Kesiapsiagaan Anak di Yogyakarta*. (Jurnal Keperawatan Soedirman, Volume 11, Nomor 3, 2016), hh. 199-206. <http://dx.doi.org/10.20884/1.jks.2016.11.3.700>

¹¹ Sandra Diah Ayu Pitaloka dan Tera Noviantiningtyas Ripto Saputri. *Pengaruh Metode Simulasi Pada Pembelajaran IPS Sebagai Pendidikan Mitigasi Bencana Letusan Gunung Kelud Di Sekolah Dasar Kediri*. (Jurnal PAJAR (Pendidikan dan Pengajaran), Volume 4, Nomor 4, 2020), hh. 653-662. <http://dx.doi.org/10.33578/pjr.v4i2.8010>

¹² Fitriyanti N Idrus *et al.* *Comparison of Simulation Method and Animation Video on Knowledge Related to Preparedness of Elementary School Students in Ternate, Indonesia*. (Indian Journal of Public Health Research & Development, Volume 10, Nomor 8, 2019), hh. 2038-2041. <http://dx.doi.org/10.5958/0976-5506.2019.02154.5>

¹³ A Mardani *et al.* *Development of Interactive Multimedia for Earthquake Disaster Preparedness in Elementary School*. (IOP Conf. Series: Earth and Environmental Science, Volume 683, 2021). <https://iopscience.iop.org/article/10.1088/1755-1315/683/1/012044/pdf>

A13 ¹⁴	Keefektifan bahan ajar mitigasi bencana bervisi SETS dalam bentuk buku ajar siswa. Buku ajar ini terdiri atas 1 subtema, yaitu: Benda dalam Kehidupan Sehari-hari. Dalam subtema ini terdiri atas 6 pembelajaran dan diberikan refleksi dengan ikon “Evaluasi” di akhir subtema. Lokasi penelitian berada pada sekolah dasar di kawasan rawan bencana gempa Yogyakarta. Hasil penelitian menunjukkan bahwa bahan ajar tematik bervisi SETS terbukti efektif dalam meningkatkan penguasaan konsep mitigasi bencana siswa.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A14 ¹⁵	Pengembangan media pembelajaran komik sains berlatar budaya masyarakat Banjar yaitu “Amang si Pelajar” sebagai bentuk mitigasi banjir bagi siswa SD/MI di kota Banjarmasin, Kalimantan Selatan. Isi komik merupakan serangkaian dasar-dasar dan petunjuk yang memudahkan untuk siswa dalam mempelajari dan mempraktikkan tentang mitigasi bencana banjir.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (banjir) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A15 ¹⁶ dan A16 ¹⁷	Komik Anak Sekolah (KOASE) sebagai media pembelajaran mitigasi bencana bagi siswa SD. Komik ini berisi pengetahuan mitigasi bencana.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)

¹⁴ Setyo Eko Atmojo dan Wahyu Kurniawati. *Keefektifan Bahan Ajar Tematik Bervisi Science Environment Technology and Society Dalam Meningkatkan Penguasaan Konsep Mitigasi Bencana*. (Pancasakti Science Education Journal, Volume 4, Nomor 1, 2019), hh. 46-54. <https://doi.org/10.24905/psej.v4i1.57>

¹⁵ Ani Cahyadi et al. *Pengembangan Komik Sains Untuk Siswa Sekolah Dasar/Madrasah Ibtidaiyah Menuju Banjarmasin Siaga Banjir*. (Madrasah: Jurnal Pendidikan dan Pembelajaran Dasar, Volume 9, Nomor 1, 2016), hh. 73-80. <https://doi.org/10.18860/jt.v9i1.4789>

¹⁶ Eddy Noviana et al. *Why Do Primary School Students Need Disaster Mitigation Knowledge? (Study Of The Use Of Koase Comics In Primary Schools)*. (International Journal of Scientific & Technology Research, Volume 8, Nomor 11, 2019), hh. 216-221. <http://www.ijstr.org/final-print/nov2019/Why-Do-Primary-School-Students-Need-Disaster-Mitigation-Knowledge-study-Of-The-Use-Of-Koase-Comics-In-Primary-Schools-.pdf>

¹⁷ Eddy Noviana et al. *KOASE: Disaster Mitigation Learning Media in Elementary School*. (Tadris: Jurnal Keguruan dan Ilmu Tarbiyah, Volume 5, Nomor 1, 2020), hh. 11-25. <https://doi.org/10.24042/tadris.v5i1.5183>

A17 ¹⁸	Pendidikan keselamatan siswa SD dengan permainan ular tangga yang dikembangkan. Permainan ular tangga yang digunakan berisi 12 gambar potensi bahaya yang mudah dikenali oleh siswa. Penggunaan permainan ini memberikan peningkatan pengetahuan keselamatan bagi siswa SD.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana umum • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A18 ¹⁹	Model Pendidikan kebencanaan di SD pada Kawasan rawan bencana Gunung Merapi Yogyakarta, terfokus pada evakuasi dan tindakan penyelamatan diri dengan simulasi.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (erupsi) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A19 ²⁰	Pengembangan model permainan antisipasi bencana <i>tsunami</i> dari 30 bentuk permainan dalam Pendidikan jasmasni di SD. Implementasi model permainan ini terintegrasi dalam pendidikan jasmani kurikulum 2013. Lokasi penelitian pada SD di daerah Banten dan Sumatra Barat. Hasil intervensi model permainan menunjukkan peningkatan pengetahuan antisipasi <i>tsunami</i> dan peningkatan kebugaran jasmani siswa.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (<i>tsunami</i>) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A20 ²¹	Uji validasi aplikasi game SIAGA (Siap Antisipasi Gempa) menggunakan aplikasi Android dengan materi dalam game ini berupa simulasi gempa dan mitigasi bencana gempa.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)

¹⁸ Evi Widowati *et al.* *Children's Safety Education Model through Child-Friendly Games.* (Kemas: *Jurnal Kesehatan Masyarakat*, Volume 14, Nomor 2, 2018), hh. 157-162. <https://doi.org/10.15294/kemas.v14i2.14705>

¹⁹ Woro Sri Hastuti *et al.* *Disaster Mitigation Education for Elementary School Students in Indonesia: Challenges and Potentials.* (*Psychology and Education*, Volume 58, Nomor 5, 2021), hh. 6883-6894 <http://psychologyandeducation.net/pae/index.php/pae/article/view/6780>

²⁰ Widiastuti *et al.* *Effectiveness Of Game Model On Tsunami Disaster Anticipation In Two Provinces Of Indonesia, Year 2019.* (*Journal of Tsunami Society International*, Volume 38, Nomor 4, 2019), hh-179-192. <http://www.tsunamisociety.org/STHV0138N4Y2019.pdf>

²¹ Endang Widi Winarni *et al.* *Mobile educational game for earthquake disaster preparedness in elementary school.* (*ARNP Journal of Engineering and Applied Sciences*, Volume 13, Nomor 7, 2018), hh. 2612-2618. http://www.arnjournals.com/jeas/volume_07_2018.htm

A21 ²²	Program Pendidikan kebencanaan dengan <i>Maena</i> (tarian tradisional Nias selatan). Sasaran program guru dan siswa SD tentang mitigasi bencana gempa. Program ini memberikan peningkatan respon yang tepat bagi siswa saat terjadi gempa.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A22 ²³	Program pengabdian masyarakat dengan sosialisasi dan simulasi. yang dilakukan di SDN Tanjung Anom Banten. Hasil kegiatan yaitu para siswa mengetahui dan memahami potensi bencana alam yang terjadi khususnya di wilayah tempat tinggalnya serta belajar tentang terjadinya bencana alam dan memperoleh pengetahuan tentang tindakan yang harus dilakukan jika terjadi bencana alam. Pemberian materi pendidikan siaga bencana dan simulasi kecil meningkatkan kesiapsiagaan siswa sebelum bencana, saat bencana, dan pasca bencana.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana alam • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A23 ²⁴	Penerapan metode <i>role playing</i> dengan penelitian tindakan untuk mengevaluasi respon siswa terhadap lingkungan sekitar setelah terjadi dan setelah bencana (banjir dan gempabumi).	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (banjir dan gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A24 ²⁵	Penerapan metode simulasi dan buku bergambar untuk mengetahui pengetahuan kesiapsiagaan bencana gempa bumi. Lokasi penelitian pada SD di Majene, Sulawesi Barat. Hasil intervensi menunjukkan terdapat peningkatan pengetahuan siswa terhadap kesiapsiagaan bencana gempa.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)

²² Masahiro Shoji *et al.* Behavioral impact of disaster education: Evidence from a dance-based program in Indonesia. (*International Journal of Disaster Risk Reduction*, Volume 45, 2020). <https://doi.org/10.1016/j.ijdrr.2020.101489>

²³ H Herdiansyah *et al.* Disaster Awareness through Disaster Preparedness Education for Primary Schools. (*IOP Conf. Series: Earth and Environmental Science*, Volume 519, 2020). <https://iopscience.iop.org/article/10.1088/1755-1315/519/1/012016>

²⁴ OC Dewi *et al.* Fact-finding During Quick Response to Disaster: School Students' Response to the Environment. (*IOP Conf. Series: Earth and Environmental Science*, Volume 505, 2020). <https://iopscience.iop.org/article/10.1088/1755-1315/505/1/012039/pdf>

²⁵ Ratna Sari *et al.* Earthquake Disaster Preparedness Education in Elementary School Students in Majene Regency. (*Hasanuddin International Journal Of Health Research*, Volume 1, Nomor 1, 2019), hh. 47-55. <https://journal.unhas.ac.id/index.php/HIJHRS/article/view/7247>

A25 ²⁶	Intervensi media video dalam Pendidikan bencana banjir bagi siswa SD di Kota Bengkulu. Metode penelitian yang digunakan pra-eksperimen dengan hasil intervensi menunjukkan terdapat pengaruh kesiapsiagaan siswa dalam bencana banjir.	<ul style="list-style-type: none"> • Bentuk: non integrasi • Konteks; bencana banjir • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)
A26 ²⁷	Model kurikulum bencana lokal (gempa) pada SD di Sumatra Barat (Kota Padang dan Kabupaten 50 Kota). Model ini terdiri dari: 13 kompetensi dasar, 23 tujuan pembelajaran, 10 pendekatan dan model pembelajaran, dan 8 bentuk penilaian dalam bencana gempa.	<ul style="list-style-type: none"> • Bentuk: integrasi • Konteks; bencana besar (gempa) • Teknis: setelah bencana • Sifat: jangka pendek (tidak berkelanjutan)



²⁶ Ida Rahmawati et al. *The effect of video media as flood disaster education in elementary school students in Bengkulu city.* (Nurse and Health: Jurnal Keperawatan, Volume 9, nomor 1, 2020), hh. 23-31. <https://doi.org/10.36720/nhjk.v9i1.138>

²⁷ Alwen Bentri. *A Model Local Content Disaster-Based Curriculum At Elementary School.* (International Journal of GEOMATE, Volume 13, Nomor 40, 2017), hh. 140-147. <https://doi.org/10.21660/2017.40.tvet023>

b. Infografis abstrak artikel

1. Kode artikel: A1

Universal Journal of Educational Research 8(12): 6919-6924, 2020
DOI: 10.13189/ujer.2020.081258

<http://www.ijsph.org>

SETS (Science, Environment, Technology, and Society) Vision Thematic Learning Model in Improving Disaster Material Understanding of Elementary School Students

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(b): Setyo Eko Atmojo, Taufik Muhtarom, Beny Dwi Lukitsaji (2020). SETS (Science, Environment, Technology, and Society) Vision Thematic Learning Model in Improving Disaster Material Understanding of Elementary School Students. *Universal Journal of Educational Research*, 8(12), 6919 - 6924. DOI: 10.13189/ujer.2020.081258.

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Abstract The purpose of this research is to determine the effect of the thematic learning model with SETS (Science, Environment, Technology, and Society) vision on the understanding of disaster material in elementary school students. This type of research is a quasi-experimental design. The sample was obtained using a purposive sampling technique, namely four elementary schools prone to earthquake disasters in the Bantul Regency area of Yogyakarta, Indonesia. Two schools (SD Piyungan and SD Tuling) as the experimental group and two schools (SD Karanggayam and SD Segoreyoso) as the control group. Based on the results of the t-test, post-test data obtained a t-value of 5.781 > t table of 1.998, which means that there are differences in understanding students' disasters between the experimental group and the control group. The results of the calculation of the gain score indicate that the experimental group had an increased score at a high level ($g > 70$) while the control group increased at a moderate level ($0.3 \leq g \leq 0.7$). This study concludes that the application of the thematic learning model with the SETS (Science, Environment, Technology, and Society) vision has a practical effect on improving the understanding of disaster material for elementary school students.

Keywords Learning Model, Thematic Learning, SETS Vision, Disaster Learning Material

1. Introduction

Natural conditions in the last ten years continue to decline. The decline in natural conditions is caused by two factors, namely factors originating from humans and factors originating from the universe itself. Humans are the main actors responsible for the destruction of the universe. Human activities that tend to dominate and take the benefit as much as possible from nature have caused various changes and damage to nature in the past decade. The impact of human activities that are not environmentally friendly, one of which is an increase in the earth's surface temperature or better known as global warming.

The Indonesian archipelago's geographical position is unique, making Indonesia one of the areas most vulnerable to disasters. Indonesia, which consists of islands, has a very high potential for disasters and also varies significantly from the aspect of disaster types [1]; [2]. Application of plate tectonic theory to the Indonesian archipelago explains that an Indonesian archipelago is a place of collision with the crust of the earth. It is the collision of the Eurasian / Southeast Asian Plate, the Pacific, and the Dutch East Indies. Besides, the complexity of demographic, social, and economic conditions in Indonesia contributes to the

2. Kode artikel: A2

School-community collaboration in disaster education in a primary school near Merapi volcano in Java Island

Tuswadi¹ and Hayashi Takehiro

Citation: *AIP Conference Proceedings* **1730**, 090001 (2016); doi: 10.1063/1.4947418

View online: <http://dx.doi.org/10.1063/1.4947418>

View Table of Contents: <http://aip.scitation.org/toc/apc/1730/1>

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School-community collaboration in disaster education in a primary school near Merapi volcano in Java Island

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Abstract. This paper describes our latest innovation in implementation of school-community collaboration in disaster education at *Sekolah Dasar Negeri 1 Banaran*, located in Cangkringan district of Sleman regency, as high-risk area of having impacts from Merapi eruption. The collaboration between school and local communities in an integrated disaster prevention lesson provides a space for students to not only obtain important information and knowledge about natural disasters through their teacher in the classroom but also gain important knowledge directly from the people who live around the school. Through this study, students are taught to be sensitive to utilize the resources in their nearest environment to support the process and the results of their learning about survival in a disaster-prone area. Many students have not well understood relation between earthquake and volcanic eruption. Result of student groups' interview to a number of local community members showed that (1) In 2010 Merapi eruptions, from 8 residents, 5 of them, together with their family members were staying at home and getting panic while 3 other residents had already evacuated. (2) Five residents reported no one in their village was killed although some houses were damaged. (3) For anticipating future eruption, the residents confessed to quickly follow the government for evacuation by preparing in advance the transportation, masks, their own precious goods and important documents. From the result of the groups' report during discussion activities in the class, it was revealed that the students are aware of immediate evacuation as the best way to keep themselves safe from eruption. They also understood things to bring for evacuation including maskers.

3. Kode artikel: A3

Juridikdas

Jurnal Riset Pendidikan Dasar

Vol. 3, No. 3, Bulan Desember, Tahun 2020

p-ISSN 1693-8577 e-ISSN 2599-0691

Pengaruh Penggunaan Model *Problem Based Learning* pada Materi Siaga Bencana terhadap Kemampuan Literasi Sains Siswa Kelas IV SD Negeri Kota Bengkulu

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Abstract

This study aims to determine the effect of the use of the Problem Based Learning model on disaster preparedness material on the scientific literacy skills of Class IV students at the Bengkulu State Elementary School. This type of research is quantitative research with experimental methods. The design in this study is The Matching Only Pretest-Posttest Group Design. The population in this study was SDN 01, SDN 04, SDN 08, and SDN 11. The sampling used cluster random sampling technique so that the fourth grade of SD Negeri 08 Bengkulu City (experimental class) and class IVA SD Negeri Bengkulu City (control class) were obtained. Instrument testing was conducted in class V of SD Negeri 04 Kota Bengkulu. The instruments used in this study were the questionnaire components of scientific attitude totaling 15 questions, the multiple-choice context sheet test sheets totaling 10 questions. Soft test components in the form of multiple choice knowledge which number 10 questions, and observation sheets of competency components. The calculation results of the t-test gain score on the components of scientific attitude obtained a thitung of 5.73 greater than the ttabel value of 1.673, in the context component obtained a thitung of 4.48 greater than the ttabel value of 1.673, the component of knowledge obtained by thitung for 4.78 greater than the ttabel value of 1.673, and in the competency component in the experimental class the criteria are very good at 57%, the criteria for good are 43% while the criteria for the control class are very good at 35.7%, the criteria are good 53.0% , the criteria are quite 10.7%. Based on the results of the four components of scientific literacy, it means that there is a significant influence on the use of the Problem Based Learning model on students' literacy skills. The conclusion in this study is that there is the influence of the use of the Problem Based Learning model in Disaster Preparedness material on Science

4. Kode artikel: A4

JINoP (Jurnal Inovasi Pembelajaran),
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P-ISSN 2443-1591 E-ISSN 2460-0873

[http://ejournal.umm.ac.id/
index.php/jinop](http://ejournal.umm.ac.id/index.php/jinop)

**PENGARUH PELAKSANAAN PROGRAM PENGURANGAN RISIKO
BENCANA TERINTEGRASI MENGGUNAKAN MODEL *PROBLEM
BASED LEARNING* BERBASIS ICT BAGI SISWA KELAS IV SD
IT IQRA' 1 DI KOTA BENGKULU**

Endang Widi Winarni

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ABSTRAK

Tujuan penelitian ini adalah mengetahui efek pelaksanaan Program Pengurangan Resiko Bencana (PRB) terintegrasi ke dalam pembelajaran tematik menggunakan model *Problem Based Learning* (PBL) berbasis ICT untuk mengembangkan sikap, pengetahuan dan keterampilan siaga bencana siswa SD. Jenis penelitian adalah "Pretest-Posttest Kelompok Tunggal". Populasi adalah siswa kelas IV SD IT IQRA' 1 Kota Bengkulu tahun 2015/2016. Sampel diambil secara random terpilih adalah kelas IVA berjumlah 31 siswa. Instrumen yang digunakan adalah tes tertulis dan lembar observasi keterampilan. Teknik analisis data dilakukan menggunakan uji-*t* tak mandiri. Hasil Uji *t* test menunjukkan aspek sikap nilai *t* hitung (8.67) > *t* tabel (2.03), aspek pengetahuan nilai *t* hitung (4.73) > *t* tabel (2.03), sedangkan aspek ketrampilan nilai *t* hitung (5.67) > *t* tabel (2.03). Simpulan yang diperoleh adalah penggunaan model PBL berbasis ICT dalam pembelajaran tematik terpadu dapat memberikan efek secara nyata terhadap peningkatan sikap sebesar 26.8, pengetahuan sebesar 19.97, dan keterampilan sebesar 24.6 siaga bencana siswa kelas IV SD.

Kata kunci: *problem based learning*, sikap, pengetahuan, keterampilan, siaga bencana

5. Kode artikel: A5

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Jurnal Kajian Ilmu dan Pendidikan Geografi
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Penerbit: Program Studi Pendidikan Geografi, FISE, Universitas Hamzanwadi

**ANALISIS KEBUTUHAN PENGEMBANGAN MODEL PEMBELAJARAN
PENGETAHUAN MITIGASI BENCANA GEMPABUMI BERBASIS
PERMAINAN TRADISIONAL BENGKULU**

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Abstrak Pengetahuan mitigasi bencana gempabumi penting dikuasai oleh peserta didik usia sekolah dasar, tujuannya untuk meminimalisir dampak fisik dan psikis ketika gempabumi terjadi. Tujuan dalam penelitian ini adalah untuk mengetahui kebutuhan pengembangan model pembelajaran pengetahuan mitigasi bencana gempa bumi berbasis permainan tradisional Bengkulu. Analisis kebutuhan dalam penelitian ini merupakan bagian proses penelitian dan pengembangan (R&D) model *ADDIE*. Analisis kebutuhan dalam penelitian ini dilakukan berdasarkan analisis kurikulum dan analisis karakteristik siswa sebagai pengguna. Pengecekan keabsahan data penelitian dilakukan dengan diskusi teman sejawat. Hasil penelitian yang diperoleh dalam penelitian ini adalah model pembelajaran pengetahuan mitigasi bencana gempabumi berbasis permainan tradisional Bengkulu dapat dilaksanakan di Kelas IV Sekolah Dasar. Tema pembelajaran yang dapat digunakan yaitu Tema Daerah Tempat Tinggalku. Materi pokok yang ditetapkan yaitu: 1) gotong royong, 2) gerak dasar lari, 3) menjaga kelestarian alam, 4) sikap peduli lingkungan, 5) sikap disiplin menjaga kelestarian lingkungan, 6) Membedakan pengetahuan mitigasi bencana masa lampau dan masa sekarang, dan 7) Membuat diagram batang. Hasil analisis kurikulum menunjukkan bahwa model pembelajaran pengetahuan mitigasi bencana gempabumi untuk siswa sekolah dasar dapat dikembangkan.

Kata kunci: mitigasi bencana gempabumi, permainan tradisional, pembelajaran tematik terpadu

6. Kode artikel: A6

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 ISSN 1911-2017 E-ISSN 1911-2025
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Natural Disaster Mitigation through Integrated Social Learning Science in Primary School

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Abstract

This research aims to develop a learning model in disaster volcanic eruptions, floods and earthquakes integrated in social science subjects and in elementary school level. This learning model includes five features, namely: (1) the model syllabus and lesson plans, (2) the theme and subthemes, (3) teaching methods, (4) materials / textbooks and CDs about the disaster of nature, and (5) techniques and types assessment of student learning outcomes. Improving the knowledge and skills of teachers and students about the concepts, principles and practice self-rescue if the occurrence of natural disasters. This study is a research and development (R & D) in elementary school. This type of data consists of qualitative and quantitative data. Exploratory data analysis results based disaster mitigation model of learning is conducted qualitatively by descriptive percentage. Analysis of empirical test data using descriptive statistics percentages. Data were analyzed with the results of the implementation of parametric statistical tests, descriptive of the samples using a t-test. Research shows that learning device development results declared effective because it proved able to increase disaster mitigation skills of students, student learning, and the comfortable to be applied at primary school level.

Keywords: disaster mitigation, disaster learning, integrated social science

7. Kode artikel: A7

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Pengaruh Edukasi Audio Visual dan Role Play Terhadap Perilaku Siaga Bencana Pada Anak Sekolah Dasar

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DOI: <https://doi.org/10.31603/nursing.v6i2.2543>

Abstract

Keywords:
 Education
 Role play
 Audiovisual
 Disaster
 preparedness

Indonesia is a country that often experiences natural disasters, especially earthquakes and volcanic eruptions, because of Indonesia's location in the Indo-Australian, Eurasian and Pacific tectonic plates that produce certain threshold energy stacks. Most victims are children and parents, because they can't save themselves. Need to prepare the community to be ready and alert when an earthquake occurs. Prepared disaster preparedness needs to be included in school activities with learning methods including education, training and skills in the implementation of disaster management. The purpose of this study was to determine the effect of audio-visual education and role play on disaster preparedness behavior in elementary school. The design used was Quasi experimental design, with a pretest and posttest nonequivalent control group design. The sample used was 60 respondents, there are 30 respondents with the control group, and 30 respondents with intervention group. Audio visual uses videos and role play with demonstrations. The results of this study are that there is an effect of education using audio visual and role play and both are effective in influencing changes in disaster preparedness behavior with a P value: 0,000.

8. Kode artikel: A8

**GAMBARAN KESENANGAN DAN MOTIVASI BELAJAR SISWA SEKOLAH DASAR
KELAS IV DAN V DI SDN TIRTOMARTO 03 AMPELGADING DALAM MENGIKUTI
SIMULASI EVAKUASI BENCANA GUNUNG MELETUS**

Hardiyanto

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Abstract : Community's lack of understanding of evacuation during disasters is one of the things that affects the emergence of casualties during disasters. Yet with the knowledge of the threat of disasters that are around, this will be able to reduce the number of victims and minimize damage caused by disasters. Objectives, This study aims to explore the fun and motivation of disaster evacuation simulation participants in Tirtomarto 3 Elementary School Children . Method, The research method is descriptive exploratory. The sample used was 60 people who were obtained by simple random sampling from all grade 4A and 4B students and grade 5 at SDN Tirtomarto 03. Results. The gender frequency of the majority of respondents was women with a total of 35 respondents (58.4%). 60% of respondents said that they were very happy with this method, 35 percent said they were happy and only 1.6% (1 respondent) said they were not happy. 51% of respondents were highly motivated in participating in this evacuation simulation, and 35% said they were motivated. Discussion, One characteristic of simulation is playing a role, according to the concept. Contains the nature of play in doing simulations, so this is suitable for children where they can simultaneously learn and play. Motivation is an encouragement for someone to act or have the expected behavior. Motivation is important in the success of disaster management, especially for children. Suggestion, Deeper research is needed regarding the appropriate duration and type of learning that can explore the benefits of evacuation simulations optimally

Keyword : Learning Excitement, Learning Motivation, Simulation

9. Kode artikel: A9

Jurnal Keperawatan Soedirman (The Soedirman Journal of Nursing), Volume 11, No.3 November 2016)

**PENGARUH PEMBERIAN METODE SIMULASI SIAGA BENCANA GEMPA BUMI
TERHADAP KESIAPSIAGAAN ANAK DI YOGYAKARTA**

Fika Nur Indriasari

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ABSTRACT

Background: Indonesia is located within the ring of fire and Yogyakarta is one of the area which is experiencing with earthquake. The earthquake happened in 2006 left many victims. Most of them are elderly and children. Not all children are trained to deal with disaster, therefore it is necessary to conduct a training to elementary school so the children have a knowledge how to deal with this disaster if it is suddenly happened.

Objective: The main aims of this research is to find out the effect of disaster simulation method toward the children readiness.

Method: The research design applies quasi experiment with one pre post test design. The sample are taken by using purposive sample for 31 respondents and the data are collected by using questioners. The hypothesis is tested by using Wilcoxon test.

Result: The results of this study showed there is influence on the preparedness of disaster simulation method children with a value of $P < 0.001$.

Conclusion: The training of readiness to face an earthquake disaster increase the level of children awareness. All of the level 6 Giwangan elementary students is able and involved after the training was repeated 5 times and most of the children showed that the level of awareness is categorised as less ready

Keywords: Disaster Preparedness Training, The Readiness to deal with disaster, simulation method

10. Kode artikel: A10



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DOI : <http://dx.doi.org/10.33578/pjr.v4i2.8010>

THE INFLUENCE OF SIMULATION METHOD AT SOCIAL SCIENCE LEARNING AS DISASTER MITIGATION EDUCATION OF MOUNT KELUD IN KEDIRI ELEMENTARY SCHOOL

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ABSTRACT

The 2013 curriculum emphasizes learning using the scientific approach. In fact, many teachers still use conventional learning methods so that it impacts on student activity in the learning process. Moreover, the material taught is not related to concrete situations. The simulation method can be used to improve student learning outcomes in 4th grade in social science KD 4.2. The purpose of this study was to determine the effect of the simulation method on the ability to distinguish regions affected by the Mount Kelud eruption and to know the effect of the simulation method on the ability to demonstrate the mitigation efforts of the Mount Kelud eruption as a volcano in elementary school students in Kediri. The results of this study indicated: (1) based on the test results obtained $t_{count} = 9.531 > t_{table} = 2.032$ with a significance level of 0.05, there were differences in the results of the average pre-test with post-test which meant that there was an influence of using the simulation method on the ability of students to distinguish regions affected by the eruption of Mount Kelud; (2) based on the test results obtained $t_{count} = 12.063 > t_{table} = 2.032$ with a significance level of 0.05, there were differences in the results of the average non-simulation with simulation, which meant that there was an influence of using the simulation method on the ability to demonstrate mitigation efforts in eruption of the Kelud as a volcano.

Keywords: learning methods, disaster mitigation, elementary school

11. Kode artikel: A11



DOI Number: 10.5958/0976-5506.2019.02154.5

Comparison of Simulation Method and Animation Video on Knowledge Related to Preparedness of Elementary School Students in Ternate, Indonesia

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¹Postgraduate Program of Nursing, School of Nursing, ²Department of Public Health, Medical Faculty,
³Department of Basic Nursing, School of Nursing, Universitas Brawijaya

ABSTRACT

Ternate location which passed by Pacific Ring of Fire made the area of Ternate have a high risk of experiencing volcanic eruptions. School as one of the stakeholders is responsible for improving the preparedness of students. Students are the most group vulnerable to disasters. Preparedness in reducing disaster risk that possessed by students is still relatively low, thus requires training for students to deal with disasters that cannot be predicted when it occurs. This study aimed to analyze the effectiveness of simulation and animation video methods in improving the knowledge related to preparedness among students. This study used pre-test posttest with control group design. The population in this study were fifth and sixth-grade students from four different schools which in the disaster-prone area in Ternate, North Maluku. Total respondent in this study was 90 respondents that were selected using purposive sampling technique, then divided into two groups: simulation and animation video methods. Data of knowledge and attitude variables were collected before and after training using a questionnaire. Data collected from this study were analyzed using the Wilcoxon and Mann Whitney tests ($\alpha=0.05$) with SPSS 20. The result of this study was shown that there was a significant difference in knowledge between the two groups before and after an intervention. Both groups shown an improvement mean score in knowledge (from 5.02 to 7.38) Similarly, the video group (5.27 to 6.67, $p=0.000$). Comparison between the two methods shown that the simulation method obtained higher knowledge than the video method with a mean rank of 55.44 vs. 35.56 ($p=0,000$).

Keywords: knowledge, preparedness, simulation, animation video

12. Kode artikel: A12

International Geography Seminar 2019 IOP Publishing
 IOP Conf. Series: Earth and Environmental Science 683 (2021) 012044 doi:10.1088/1755-1315/683/1/012044

Development of Interactive Multimedia for Earthquake Disaster Preparedness in Elementary School

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Abstract This research study aimed at produce interactive multimedia as a learning medium for earthquake disaster mitigation in the face of earthquake disaster in a more interesting and fun way. The development process was examined according to the Analysis, Design, Develop, Implement, Evaluate (ADDIE). This produce interactive multimedia has a video about the simulation of earthquake and earthquake mitigation video of 3 stages that is before, during and after earthquake. In expected can be providing basic safety information and improve preparedness against earthquake disasters for elementary school student.

13. Kode artikel: A13



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Keefektifan Bahan Ajar Tematik Bervisi *Science Environment Technology and Society* Dalam Meningkatkan Penguasaan Konsep Mitigasi Bencana

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Abstrak

Penelitian ini bertujuan untuk menguji keefektifan bahan ajar tematik bervisi *science, environment, technology and society* (SETS) dalam meningkatkan penguasaan konsep Mitigasi Bencana siswa sekolah dasar. Metode yang digunakan pada penelitian ini adalah *pre experimental design* dengan teknik *one group pretest-posttest design*. Penelitian ini dilaksanakan di kelas V SD Piyungan Bantul D.I Yogyakarta. Hasil penelitian menunjukkan bahwa Bahan ajar tematik bervisi SETS terbukti efektif mampu meningkatkan penguasaan konsep mitigasi bencana siswa. Hal tersebut terbukti dari nilai-nilai statistik menunjukkan angka sigifikansi yang lebih kecil dari 0,05 sehingga hipotesis alternatif yang menyatakan bahwa "Terdapat perbedaan antara skor nilai tes akhir dan skor nilai tes awal kemampuan penguasaan konsep mitigasi bencana", diterima. Sehingga dapat disimpulkan bahwa bahan ajar tematik bervisi SETS efektif dalam meningkatkan penguasaan konsep mitigasi bencana siswa.

Kata Kunci: bahan ajar, tematik, SETS, Mitigasi Bencana

14. Kode artikel: A14

MADRASAH

Jurnal Pendidikan dan Pembelajaran Dasar
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Page | 73

**PENGEMBANGAN KOMIK SAINS UNTUK SISWA
SEKOLAH DASAR/MADRASAH IBTIDAIYAH
MENUJU BANJARMASIN SIAGA BANJIR**

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Abstract. Banjarmasin as a lowland city, many small, medium, and large rivers, the majority of swamp areas, would be interesting to be used as an object in education as a place to learn about the knowledge and cultures of the river that characterized by region. The right place is education, especially elementary school which is the most appropriate target in instilling awareness on early. World of education, learning will be interesting if the media are included to make students more excited in the learning process. Comics contained illustration of character, scene, and groove usually arranged as entertainment. In this research developed in the form of science comic based on disaster mitigation, that is flood disaster with hope to be as educative media of learning also as entertainment for student. This research uses model of ADDIE media product development. The research developing two comic entitled "Amang si Pembelajar" and "Belajar Siaga Banjir (BSB)" with good quality in terms of material with a score of 3.22 and excellent quality in terms of learning media with the final average of 3.3. Science comics based on flood mitigation is full color and in accordance with the needs of primary school education and has had ISBN number 602-73178-0-9 and barcode number 9786027317802.

Keywords: Comic; Flood; Disaster Mitigation; Elementary School

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15. Kode artikel: A15



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Why Do Primary School Students Need Disaster Mitigation Knowledge? (Study Of The Use Of Koase Comics In Primary Schools)

Eddy Noviana, Otang Kurniawan, Munjiatun, Nugraheti Sismulyasih Sb, Sri Dewi Nirmala

Abstract : Disaster mitigation learning is preliminary knowledge in detecting disasters in Indonesia, for that it needs KOASE comic media as an alternative learning media. The research method uses a quasi-experiment with a one-group pretest-posttest design with a sample of 72 primary school students, data collection techniques by doing pretest and posttest which are analyzed using the formula of learning outcomes, after getting categorized according to student knowledge. The results of research on pretest disaster mitigation knowledge data 60.30 with sufficient categories, and 79.70 posttest data with good categories while to see improvement using N-Gain with an average of 0.42 with intermediate categories. So it can be concluded that the use of KOASE comic media in disaster mitigation learning can improve student knowledge outcomes about disaster mitigation.

Index Terms: disaster mitigation knowledge, KOASE comics.

16. Kode artikel: A16

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KOASE: Disaster Mitigation Learning Media in Elementary School

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Disaster mitigation learning,
Elementary school,
KOASE

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Abstract: Disaster mitigation learning in elementary schools is the knowledge that must be taught considering that Indonesia is a disaster-prone region. This research was aimed to design and develop KOASE comics that are appropriate to be used to understand disaster mitigation. The research method used was the 4D (Define, Design, Develop, dan Disseminate) model. The feasibility of the product assessed by expert validators was 51.13 with a fairly feasible category. The teacher's response at the development stage obtained the score of 92.08 with a very good category and the students' responses obtained a score of 85.87 with a very good category. Then it can be concluded that the development of KOASE comics is appropriate to be used as a medium for disaster mitigation learning. It is suggested for the next researcher is to develop comics that are more specific to one type of natural disaster so that they can explore the depth of essential material. For the teacher, this comic can be used as a source of additional reading and learning media in teaching disaster mitigation.

17. Kode artikel: A17



KEMAS 14 (2) (2018) 157-162

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Children's Safety Education Model through Child-Friendly Games

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children, game, safety

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Abstract

Children are vulnerable to potential hazards from their environment because of their cognitive, psychological and social developments are in immature stages. Formal education is still lacking in teaching safety concepts for children, hence a fun educational media for children is needed so that children can learn through child-friendly educative games. Because of that develop a fun child safety education model is important to improve children's knowledge on the importance of safety, so that children can easily understand how to implement safety values in their life. We used Research and Development (R&D) level 1 design to develop children's safety education game, which consisted of five stages, started from the data collection up to assess the product effectiveness. The result was a "snake and ladders of safety" game as safety education media for children. We presented 12 pictures in "snake and ladders of safety" game. This research was conducted on year 2017. Based on the game evaluation, the average pretest score was 37.9 and the average posttest score increased to 65.5, hence there was an increase of knowledge on safety by 72.8%. It can be concluded that this game can increase children's knowledge on safety.

18. Kode artikel: A18

PSYCHOLOGY AND EDUCATION (2021) 58(5): 6883-6894
 ISSN: 1553-6939

Disaster Mitigation Education for Elementary School Students in Indonesia: Challenges and Potentials

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ABSTRACT


This study has a goal to explore the implementation of disaster education for elementary school students and to find out the supporting and inhibiting factors. A survey was given to elementary schools with various accreditations standards located around Mount Merapi, Yogyakarta. This research was quantitative research with survey method using instruments in the form of questionnaires. It was found that 40% of elementary schools in disaster-prone radius have implemented disaster mitigation education for their students. However, it is not yet fully compliant with the standards set by the National Disaster Management Agency. The implementation of disaster education programs in these schools focuses on how to save oneself through simulations. Learning does not explicitly integrate disaster education. There are several identified inhibiting factors, namely the lack of facilities and infrastructure including the disaster education curriculum and its supporting instrument. However, elementary school teachers in this area have received training so that they have quite a good understanding of disaster mitigation education. This is a supporting factor for implementing disaster mitigation in this area. In addition, the applicable curriculum allows schools to design learning based on the students' needs in their environment. Unfortunately, these potentials have not been optimally utilized.

Keywords

Disaster Mitigation, Elementary School, Challenges And Potentials

19. Kode artikel: A19

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SCIENCE OF TSUNAMI HAZARDS

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EFFECTIVENESS OF GAME MODEL ON TSUNAMI DISASTER ANTICIPATION IN TWO PROVINCES OF INDONESIA, YEAR 2019

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ABSTRACT

Indonesia is an archipelagic country prone to natural disasters, especially tsunami as the one that hit the Aceh Province in 2004 - which caused over 80,000 deaths and 125,000 injuries including elementary school children. A school preparedness survey in Indonesia indicated that among school-age children aged 7-12 years, their knowledge and preparedness in disaster emergencies was low. Consequently, dealing with disaster management, the government of Indonesia became responsible in determining the best strategies in building up preparedness. Given the existing problems, the present study aimed at developing and evaluating the effectiveness of the Game Model of Knowledge and Physical Fitness among Elementary School Children in Tsunami Disaster Anticipation for six tsunami-affected schools in Banten and W. Sumatra Provinces. The intervention study applied qualitative and quantitative approaches to develop and evaluate the effectiveness of the game model. Qualitative data was obtained from observations, interviews and secondary data documentation. The quantitative data obtained from the sample of 240 students was analyzed in accordance with the study objective. SPSS trial version 17 was used for the analysis. The results of paired and independent t-test on knowledge and fitness of the students showed that the model was effective. The effectiveness of the model in terms of improved scores was better among the intervention group than the control ($p < 0.05$), even though significant.

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20. Kode artikel: A20

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MOBILE EDUCATIONAL GAME FOR EARTHQUAKE DISASTER
PREPAREDNESS IN ELEMENTARY SCHOOLEndang Widi Winarni¹, Endina Putri Purwandari² and Yolanda Hervianti²¹Department of Elementary Education, Education Faculty, University of Bengkulu, Bengkulu, Indonesia²Department of Informatics, Engineering Faculty, University of Bengkulu, Bengkulu, IndonesiaEmail: endangwidi@unib.ac.id

ABSTRACT

Prevention of victims and losses due to earthquake disaster can be done earlier through the use of information media that are currently popular and widely used by the community, such as mobile phone communication. Educational game is a game-based learning. The game has a fantasy element that involves players in learning activities through an narration or storyline. Application of earthquake disaster mitigation is an educational game that is useful to add insight, knowledge, and understanding of children in the effort to overcome the impact of earthquake disaster. This study aims to build an educational game application on the Android platform as a learning medium for earthquake disaster mitigation and the basics of safety in the face of earthquake disaster in a more interesting and fun way. This edugame application has a video about the simulation of earthquake and earthquake mitigation video accompanied by game consisting of 3 stage that is before, during and after earthquake. This edugame application is expected to provide basic safety information in dealing with earthquake disaster for elementary school students.

Keywords: natural disaster, mobile application, educational game, disaster mitigation, earthquake.

21. Kode artikel: A21

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Contents lists available at ScienceDirect

International Journal of Disaster Risk Reduction

journal homepage: <http://www.elsevier.com/locate/ijdr>Behavioral impact of disaster education: Evidence from a dance-based
program in IndonesiaMasahiro Shoji^{a,*}, Yoko Takafuji^b, Tetsuya Harada^c^a Faculty of Economics, Seijo University, 6-1-20 Seijo, Setagaya-ku, Tokyo 157-8511, Japan^b Centre for Asian Area Studies, Rikkyo University, 3-34-1 Nishi-Ikebukuro, Toshima-ku, Tokyo 171-8501, Japan^c Credit Risk Analysis and Environmental Review Department, Japan International Cooperation Agency (JICA), Nibancho Center Building, 5-25, Niban-cho, Chiyoda-ku, Tokyo 102-8012, Japan

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ABSTRACT

Despite its potential role in reducing disaster mortality, the rigorous evaluation of the impact of disaster education on children's disaster responses, such as evacuation behavior, is scarce. This study examines the impact of a newly introduced Indonesian program on students' earthquake response. The program is carefully designed based on psychological theories and anecdotal lessons from different countries. It is also easy to understand and cost-effective. Exploiting the fact that the treatment schools for the pilot program were selected based on two observable criteria, we employ the propensity score weighting estimation. The results show positive effects on perception regarding students' ability to cope with disaster risk and likelihood of taking appropriate response during an earthquake. The participants are also more likely to self-learn and have higher knowledge of disaster risks. Furthermore, there exists a significant effect on earthquake response even among students with poor learning attitude at school. This feature is preferable for disaster education in developing countries, as those residing in disaster-vulnerable areas tend to have poor educational background.

22. Kode artikel: A22

International Conference Earth Science & Energy IOP Publishing
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Disaster Awareness through Disaster Preparedness Education for Primary Schools

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Abstract Tanjung Anom District of Mauk is a coastal area in the south of Banten whose location is classified as vulnerable to natural disasters requiring tsunami disaster mitigation efforts from the local community. This does not conform with the reality on the ground. The public has not been aware of the importance of disaster mitigation in the area. Based on data from the local region, the majority of the population is children attending school, but the school in the village of Tanjung Anom, District of Mauk has not received any disaster education program. The majority of young children do not understand what to perform in case of disaster due to the lack of education on disaster mitigation in which it should be a particular concern both for the agency and the government. Based on the importance of improving understanding of the disaster and Disaster Mitigation Education, it is implied that those should be taught to children from an early age. Community service through the action of "Disaster Preparedness Education" was done to the students at SDN Tanjung Anom, amounting to 180 students. The program provided to include the provision of materials relating to the disaster, disaster mitigation, field or simulations as well as to facilitate collaboration among stakeholders to introduce the students in order to be aware and understand about the potential of natural disasters that may occur and the occurrence of natural disasters and obtain the knowledge in relation to the action during Pre-disaster, emergency responses and post-disaster. Disaster preparedness educational materials and a small simulation have been completed so as to improve student preparedness in the event of the disaster from the practice to overcome disasters.

Keywords: Natural disasters, Disaster Education, Community Service, Disaster preparedness

23. Kode artikel: A23

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Fact-finding During Quick Response to Disaster: School Students' Response to the Environment

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Abstract. Earthquakes, floods, and landslides are frequent disasters in Indonesia. They can happen anytime. Recently Department of Architecture Faculty of Engineering Universitas Indonesia, together with the Indonesian Red Cross in Bogor Regency and its volunteers squat (SIBAT) had conducted disaster role-playing as a preparedness program for elementary school students. The role-play was aimed to introduce a quick response for elementary school students by the time the disaster happened at their school. Two kinds of disasters were chosen based on the school location's characteristics: flooding and earthquake. The method involved in this study is action-research. In the end, the students were asked to draw their spatial experience in one piece of paper as a reflection. Additionally, the team also gave feedback questions or quiz to measure the starting point of the role-playing which expected to shape their new knowledge. For in-depth aspects, the students also received a badge as the inauguration sign of "Agent of responsive to disaster". This paper outlines the fact-finding during the role-playing as the students' response to the environment. The findings are useful as the baseline for a disaster quick response preparedness module for elementary students' development.

24. Kode artikel: A24

Vol 1, No. 01, Agustus 2019

Hasanuddin International Journal Of Health Research

Earthquake Disaster Preparedness Education in Elementary School Students in Majene Regency

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Keywords: Education, Simulation, Picture Book, Preparedness, Earthquake

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ABSTRAK

Children are one of the vulnerable populations affected by natural disasters, due to their inability to act independently in the event of a disaster. So it takes effort to improve the preparedness of children to face natural disasters. This study aims to analyze the effect of education using simulation methods and picture book on knowledge about disaster preparedness. This research was conducted in SDN 26 Pakkola as an intervention group and SDN 28 Tamo as a control group. The method used is Quasi Experiment with the design of Non-Randomized Pre-test Post-Test Control Group Design. The total sample are 70 samples. Sampling was done in Simple Random Sampling. Data analysis using Wilcoxon Test and Mann-Whitney. The results showed that the average knowledge score experienced an increase, the intervention group (40%) while the control group (27). This study also showed differences in the average score of knowledge of respondents between the intervention and the control group. For pre-test ($p = 0.962$) which means there was no significant difference while in post-test 1 and 2 there are significant differences ($p = 0.001$ and $p = 0.000$). There was the effect of earthquake disaster simulation education and picture book on knowledge ($p = 0.000$). This study concluded that there was an effect of simulation methods and picture books on increasing student knowledge about earthquake preparedness.

25. Kode artikel: A25

Rahmawati, I., Giena, V. P., Triana, N., Keraman, B., Haadiy, N. (2020). *Nurse and Health: Jurnal Keperawatan*, 9 (1): 23-31
<http://ejournal-kertacendekia.id/index.php/nhjk/index>

Original Research Article

THE EFFECT OF VIDEO MEDIA AS FLOOD DISASTER EDUCATION IN ELEMENTARY SCHOOL STUDENTS IN BENGKULU CITY

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Abstract

Background: Disaster preparedness is needed from an early age in order to reduce the impact of disaster risk. Elementary school students are still had lack of knowledge about preparedness in dealing with floods, in general. Bengkulu Elementary School (SDN) is one of the schools affected by flooding when the River Basin (DAS) is unable to accommodate river water discharge.

Objectives: The purpose of this study was to determine the effect of video media on student preparedness in dealing with floods in Bengkulu City.

Methods: The study design used a Pre-Experiment with One Group Pretest-Posttest design. The population in this study were all fifth-grade children in elementary school in Bengkulu City there are 27 students because there is only one fifth grade in the school. The total sampling technique was used in this study. The data were collected by using primary data taken from the results of a questionnaire filled out by respondents. The questionnaire consisting of 24 questions of flood disaster preparedness adopted from LIPI-UNESCO (2006) and modified from the Ramadhani & Berutu, (2018). The data were analyzed by using Paired Sample T-Test.

Results: Based on the results of the study found that the use of video media about flood disaster preparedness can have an effect on the level of student knowledge related to disaster preparedness (t -test = 2.887, p -value = 0.008 < α = 0.05).

Conclusion: The importance of early education about disaster is expected to reduce the impact of disasters, especially flood disasters in risk areas. It is expected that schools will be able to include curriculum and training for their students on disaster preparedness training.

Keywords: Video Media, Flood Disaster Education, Elementary School

26. Kode artikel: A26

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A MODEL OF LOCAL CONTENT DISASTER-BASED CURRICULUM AT ELEMENTARY SCHOOLS

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*Corresponding Author, Received: 24 Dec, 2016, Revised: 25 Sept. 2017, Accepted: 30 Oct. 2017

ABSTRACT: West Sumatera geographical conditions are prone to natural disasters and earthquakes, resulting in people vulnerable to becoming victims. This is especially true for students, because they do not have the capacity to face earthquake disasters. Therefore, it is important to equip learners systematically and massively on a wide range of knowledge, attitudes/values, and basic skills required by the curriculum in schools in order to minimize the risk of earthquakes. Related to this, the present study was conducted in order to produce a model of local content disaster-based curriculum, especially about earthquakes, for elementary school students. This research was developed by using a conceptual model comprised of several stages: a literature review, a needs analysis, development of the draft, validation/expert tests, revisions, activities of focus group discussions, and finalization of models. The data was obtained from various elements of information that were relevant to earthquakes through questionnaires, the assessment format, and recording of the activities of focus group discussions; these methods were analyzed by using a descriptive qualitative analysis. The results of this development were the formulation of course objectives, competency standards, basic competencies, subject matter, approaches to learning, teaching methods, and types of assessment. These components are interrelated to one another and have clear ideas, are comprehensive, and are positioned to equip students to be functional in the face of an earthquake.

Keywords: Natural disaster, Conceptual model, Risk of earthquake, Disaster prevention



RIWAYAT HIDUP



PUTU EKA SUARMIKA, lahir di Musi, 26 September 1982. Anak pertama dari pasangan Nyoman Sudarmika, S.Pd SD dan Ketut Suwartini, S.Pd SD. Saat ini telah dikaruniai seorang putra , Gede Paundra Jayaceka (7) dari perkawinan dengan istri tercinta Nancy Kusumadewi, SE. Menyelesaikan pendidikan dasar di SD N 1 Musi tahun 1994, pendidikan menengah pertama di SMP N 1 Gerokgak tahun 1997, pendidikan menengah atas di SMA N 3 Singaraja tahun 2000, Strata 1 (S1) Teknik Lingkungan Sekolah Tinggi Teknik Lingkungan Yogyakarta tahun 2006, Strata 2 (S2) Pendidikan Dasar Konsetrasi IPA SD Prodi Pendas Pascasarjana Universitas Pendidikan Ganesha tahun 2011. Memulai karir sebagai dosen tetap pada Prodi PGSD Universitas Abdurachman Saleh Situbondo Jawa Timur tahun 2014.

Selama menjadi mahasiswa S3 Prodi Pendidikan Dasar Pascasarjana Universitas Pendidikan Ganesha telah mengikuti beberapa konferensi internasional, yaitu: 1) *GC-TALE Global Conference on Teaching, Assessment, and Learning in Education* di Denpasar Bali tahun 2017; 2) *International Conference on Environmental and Science Education-ICESE* di Semarang pada April 2019; 3) *Mathematics, Informatics, Science, And Education International CEonference (MISEIC)* di Surabaya tahun 2021. Menghasilkan karya ilmiah yang telah terbit pada jurnal bereputasi internasional, yaitu : 1) *Journal of Physics: Conference Series (JPCS) (Q4)*; dan 2) *Journal of Disaster Risk Reduction (IJDRR) (Q1)*.