LAPORAN AKHIR PENELITIAN TAHUN TUNGGAL

ID Proposal: de593d6f-74e1-4db0-a47a-65c0ca326367
Laporan Akhir Penelitian: tahun ke-1 dari 1 tahun

1. IDENTITAS PENELITIAN

A. JUDUL PENELITIAN

PENGEMBANGAN LEMBAR KERJA BERBASIS MASALAH BERBANTUAN EDMODO UNTUK MENINGKATKAN KETERAMPILAN PROSES SAINS SISWA KELAS V SD

B. BIDANG, TEMA, TOPIK, DAN RUMPUN BIDANG ILMU

Bidang Fokus RIRN / Bidang Unggulan Perguruan Tinggi	Tema	Topik (jika ada)	Rumpun Bidang Ilmu
Sosial Humaniora, Seni Budaya, Pendidikan Penelitian Lapangan Dalam Negeri (Kecil)	Pendidikan	Teknologi pendidikan dan pembelajaran	Pendidikan Ilmu Pengetahuan Alam (Sains)

C. KATEGORI, SKEMA, SBK, TARGET TKT DAN LAMA PENELITIAN

Kategori (Kompetitif Nasional/ Desentralisasi/ Penugasan)	Skema Penelitian	Strata (Dasar/ Terapan/ Pengembangan)	SBK (Dasar, Terapan, Pengembangan)	Target Akhir TKT	Lama Penelitian (Tahun)
Penelitian Kompetitif Nasional	Penelitian Dosen Pemula	SBK Riset Pembinaan/Kapasitas	SBK Riset Pembinaan/Kapasitas	3	1

2. IDENTITAS PENGUSUL

Nama, Peran	Perguruan Tinggi/ Institusi	Program Studi/ Bagian	Bidang Tugas	ID Sinta	H-Index
SRI DIANA PUTRI Ketua Pengusul	Universitas Putra Indonesia Yptk Padang	Teknik Informatika		6658437	0
MISHBAH ULHUSNA S.Si, M.Si Anggota Pengusul 1	Universitas Putra Indonesia Yptk Padang	Teknik Informatika	Membantu Ketua Peneliti dalam melaksanakan penelitian	6176717	0

3. MITRA KERJASAMA PENELITIAN (JIKA ADA)

Pelaksanaan penelitian dapat melibatkan mitra kerjasama, yaitu mitra kerjasama dalam melaksanakan penelitian, mitra sebagai calon pengguna hasil penelitian, atau mitra investor

Mitra	Nama Mitra

4. LUARAN DAN TARGET CAPAIAN

Luaran Wajib

Tahun Luaran	Jenis Luaran	Status target capaian (*accepted, published, terdaftar atau granted, atau status lainnya*)	Keterangan (*url dan nama jurnal, penerbit, url paten, keterangan sejenis lainnya*)
1	Prosiding dalam pertemuan ilmiah Internasional	sudah terbit/sudah dilaksanakan	International Conference on Social Sciences

Luaran Tambahan

Tahun Luaran	Jenis Luaran	Status target capaian (*accepted, published, terdaftar atau granted, atau status lainnya*)	Keterangan (*url dan nama jurnal, penerbit, url paten, keterangan sejenis lainnya*)
1	Publikasi Ilmiah Jurnal Internasional	accepted/published	International Journal of Education, Psychology and Counseling
1	Prosiding dalam pertemuan ilmiah Internasional	sudah terbit/sudah dilaksanakan	-
1	Prosiding dalam pertemuan ilmiah Internasional	sudah terbit/sudah dilaksanakan	-

5. ANGGARAN

Rencana anggaran biaya penelitian mengacu pada PMK yang berlaku dengan besaran minimum dan maksimum sebagaimana diatur pada buku Panduan Penelitian dan Pengabdian kepada Masyarakat Edisi 12.

Total RAB 1 Tahun Rp. 17,606,000

Tahun 1 Total Rp. 17,606,000

Jenis Pembelanjaan	Item	Satuan	Vol.	Biaya Satuan	Total
Analisis Data	HR Pengolah Data	P (penelitian)	2	500,000	1,000,000
Analisis Data	Transport Lokal	OK (kali)	2	150,000	300,000
Bahan	ATK	Paket	4	387,500	1,550,000
Bahan	Bahan Penelitian (Habis Pakai)	Unit	5	251,200	1,256,000
Pelaporan, Luaran Wajib, dan Luaran Tambahan	Publikasi artikel di Jurnal Internasional	Paket	1	2,000,000	2,000,000
Pelaporan, Luaran Wajib, dan Luaran Tambahan	Biaya seminar internasional	Paket	2	2,750,000	5,500,000
Pengumpulan Data	Transport	OK (kali)	2	400,000	800,000
Pengumpulan Data	Biaya konsumsi	OH	2	200,000	400,000
Pengumpulan Data	HR Petugas Survei	OH/OR	3	150,000	450,000
Pengumpulan Data	HR Pembantu Lapangan	OH	3	150,000	450,000
Sewa Peralatan	Peralatan penelitian	Unit	2	1,150,000	2,300,000

Jenis Pembelanjaan	Item	Satuan	Vol.	Biaya Satuan	Total
Sewa Peralatan	Transport penelitian	OK (kali)	4	400,000	1,600,000

6. HASIL PENELITIAN

A. RINGKASAN: Tuliskan secara ringkas latar belakang penelitian, tujuan dan tahapan metode penelitian, luaran yang ditargetkan, serta uraian TKT penelitian.

Pembelajaran merupakan proses dan interaksi antara siswa dengan guru. Dewasa ini, pembelajaran yang dilakukan di kelas menghendaki terjadinya pendekatan yang bersifat student centre sehingga pembelajaran di dominasi oleh peran siswa dan guru bersifat sebagai fasilitator. Salah satu pembelajaran yang direkomendasikan dengan pendekatan student centre adalah pembelajaran IPA di sekolah dasar yang pada prinsipnya merupakan gabungan antara teori dan praktik serta menginginkan siswa memiliki keterampilan proses sains. Fakta yang ditemukan di lapangan menunjukkan bahwa dalam pembelajaran IPA guru belum mampu maksimal dalam melaksanakan kegiatan praktikum, sehingga guru belum mampu menumbuhkembangkan keterampilan proses sains siswa. Jika ditinjau dari segi kelengkapan alat, 85 % sekolah telah dilengkapi dengan kit-kit praktikum IPA. Faktor yang melatarbelakangi permasalahan tersebut diantaranya: belum tersedianya bahan ajar yang dapat menunjang kegiatan praktikum IPA, keterbatasan guru dalam merencanakan praktikum, serta belum tersedianya instrumen yang lengkap dan praktis dalam penilaian keteramapilan proses sains siswa.

Penelitian ini bertujuan untuk menghasilkan lembar kerja berbasis proyek berbantuan Edmodo untuk meningkatkan keterampilan proses sains siswa kelas V SD. Penelitian yang akan dilakukan adalah penelitian pengembangan (Research and Development). Model pengembangan produk yang dipilih adalah ADDIE. Instrumen pengumpulan data yang digunakan dalam penelitian ini adalah sebagai berikut: lembar wawancara dan observasi, angket dan alat ungkap masalah, lembar validitas ahli, praktikalitas siswa dan guru, lembar penilaian keterampilan proses sains siswa. Luaran wajib dalam penelitian ini adalah dapat menerbitkan artikel pada prosiding internasional dan luaran tambahan dapat menerbitkan artikel pada jurnal internasional.

B. KATA KUNCI: Tuliskan maksimal 5 kata kunci.

Lembar Kerja, Edmodo, Keterampilan Proses Sains

Pengisian poin C sampai dengan poin H mengikuti template berikut dan tidak dibatasi jumlah kata atau halaman namun disarankan seringkas mungkin. Dilarang menghapus/memodifikasi template ataupun menghapus penjelasan di setiap poin.

C. HASIL PELAKSANAAN PENELITIAN: Tuliskan secara ringkas hasil pelaksanaan penelitian yang telah dicapai sesuai tahun pelaksanaan penelitian. Penyajian dapat berupa data, hasil analisis, dan capaian luaran (wajib dan atau tambahan). Seluruh hasil atau capaian yang dilaporkan harus berkaitan dengan tahapan pelaksanaan penelitian sebagaimana direncanakan pada proposal. Penyajian data dapat berupa gambar, tabel, grafik, dan sejenisnya, serta analisis didukung dengan sumber pustaka primer yang relevan dan terkini.

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1. Analisys (Analisa)

a. Analisis Kurikulum

Tahap analisis kurikulum dilakukan untuk melihat kesesuaian materi dengan kurikulum yang digunakan. Pada saat dilakukan penelitian ini, SDN 19 Nan Sabaris masih menggunakan kurikulum tingkat satuan pendidikan (KTSP). Berdasarkan kurikum yang digunakan sekolah maka peneliti dapat mengembangkan lembar kerja berbasis masalah berbantuan edmodo untuk meningkatkan keterampilan proses sains.

b. Analisis Materi

Analisis materi bertujuan untuk mengidentifikasi, menyusun dengan rinci dan sistematis materi-materi utama yang akan digunakan oleh peserta didik. Materi disusun berdasarkan konsep-konsep, prinsip dan prosedur dalam pembelajaran.

c. Analisis Peserta Didik

Pada tahap ini, karakter peserta didik ditelaah sesuai dengan desain yang akan digunakan dalam mengembangkan lembar kerja berbasis masalah berbantuan edmodo untuk meningkatkan keterampilan proses sains.

2. Design (desain)

Pada tahap ini, dilakukan desain untuk produk yang akan dikembangkan. Desain yang dilakukan berupa desain cover serta lembar kerja peserta didiknya yang dibuat semenarik mungkin, sehingga peserta didik termotivasi untuk belajar.

Gambar 1. Desain Cover LKPD

3. Develop (Pengembangan)

Validitas

Hasil dari penelitian yang telah dilakukan dalam mengembangkan lembar kerja berbasis masalah berbantuan edmodo untuk meningkatkan keterampilan proses sains peserta didik kelas V SDN 19 Nan Sabaris, yaitu pada tahap validitas yanag dilakukan oleh 2 orang validator terdapat pada Tabel 1.

Tabel 1. Hasil Validasi

No	Validator	Hasil (%)
1	FY	93,3
2	ZK	95
Rata-rata		94,15 (Valid)

Berdasarkan hasil yang diperoleh dari 2 orang validator tersebut, maka validitas dari lembar kerja berbasis masalah berbantuan edmodo untuk meningkatkan keterampilan proses sains memperoleh nilai rata-rata 94,15% yang berarti valid. Adapun beberapa saran yang diberikan oleh validator yaitu memperjelas mengenai petunjuk penggunaan edmodo dan memperjelas instruksi kegiatan yang akan dilakukan.

4. Implement (implementasi/eksekusi)

Implementasi adalah langkah nyata untuk menerapkan bahan ajar yang sedang dibuat. LKPD yang telah dirancang, digunakan dalam pembelajaran di SD 19 Nan Sabaris.

a. Praktikalitas

Setelah dilakukan tahap validasi, selanjutnya dilakukan tahap praktikalitas. Data yang diperoleh pada tahap ini dari lembar praktikalitas oleh guru dan peserta didik. Hasil praktikalitas yang di dapat dari guru FM adalah 87,1 dengan kategori sangat memuaskan. Adapun saran dari FM adalah menambahkan tujuan kegiatan di dalam bahan ajar. Sedangkan hahil praktikalitas yang diperoleh dari guru MD adalah 88,6 yang juga pada kategori sangat memuaskan dengan saran supaya lebih meningkatkan kualitas gambar yang digunakan. Untuk hasil praktikalitas yang diperoleh dari peserta didik adalah 91,5 dengan kategori sangat memuaskan. Dari hasil praktikalitas ini diperoleh kesimpulan bahwa bahan ajar yang digunakan praktis dan membantu serta memudahkan peserta didik dalam pembelajaran.

Untuk melihat peningkatan keterampilan literasi sains, analisis data diperkuat dengan teknik menggunakan uji paired sample t-test. Sebelum uji ini dilaksanakan, perlu dilakukan uji prasyarat, diantaranya:

a. Uji Normalitas

Uji normalitas bertujuan untuk melihat apakah kelompok data yang akan dijadikan sampel terdistribusi secara normal. Uji normalitas yang digunakan adalah kolmogorv smirnov dengan hasil analisis menggunakan aplikasi SPSS versi 20 sebagai berikut:

Tabel 2. Hasil Uji Normalitas Data Sebelum dan Sesudah Perlakuan

No	Variabel	Nilai	
		Sebelum	Sesudah
1	N	21	21
2	Mean	58.3333	66.9048
3	Standard Deviation	9.61769	1.18940E1
4	Kolmogorov-Smirnov Z	0.667	0.800
5	Sig. (2-tailed)	0.766	0.544

Berdasarkan hasil analisis data dapat disimpulkan bahwa data sebelum dan sesudah perlakuan telah terdistribusi normal, hal ini dibuktikan dengan nilai sig 2 tailed yang lebih besar dari nilai alfa (0.05). kesimpulan yang dapat ditarik dari pengujian ini adalah kedua kelompok data telah terdistribusi normal dan dapat dilanjutkan ke uji prasayarat berikutnya yaitu homogenitas.

b. Uji Homogenitas

Ringkasan hasil uji homogenitas sebagai berikut:

Tabel 2. Ringkasan Hasil Uji Homogenitas Kelompok Data

No	Variabel	Nilai
1	Levene Statistic	0.492
2	df1	1
3	df2	40
4	Sig.2 tailed	0.487

Fokus utama dalam pengujian homogenitas adalah nilai sig 2. tailed, berdasarkan tabel 2 terlihat bahwa nilai sig 2 tailed lebih besar dari nilai alfa (0.05), sehingga dapat disimpulkan bahwa kedua kelompok data homogen.

Setelah kedua uji prasyarat terpenuhi, pengujian data menggunakan uji paired sample t-test dapat dilanjutkan.

Hasil uji paired sample t-test disajikan sebagai berikut:

Tabel 3. Rekapitulasi Hasil SPSS Uji Paired Sample T-Test

No	Variabel	Nilai
1	Mean	61.119
2	Standard deviation	11.350
3	t	34.9
4	df	41
5	Sig 2 tailed	0.0000

Ho : Tidak terdapat perbedaan yang signifikan antara sebelum dan sesudah perlakuan (Tolak Ho jika nilai sig 2. Tailed < alfa 0.05)

Hi : terdapat perbedaan yang signifikan antara sebelum dan sesudah perlakuan

c. Efektivitas

hasil dari efektivitas diperoleh dari lembar penilaian keterampilan literasi sains sebelum dan sesudah perlakuan. Sebelum diberi perlakuan, hasil efektivitas adalah 58,3 yang berada pada kategori cukup.

Sedangkan setelah diberi perlakuan, hasil efektivitas menjadi 67 yang termasuk kategori tinggi. Dari hasil tersebut terdapat peningkatan dari sebelum perlakuan.

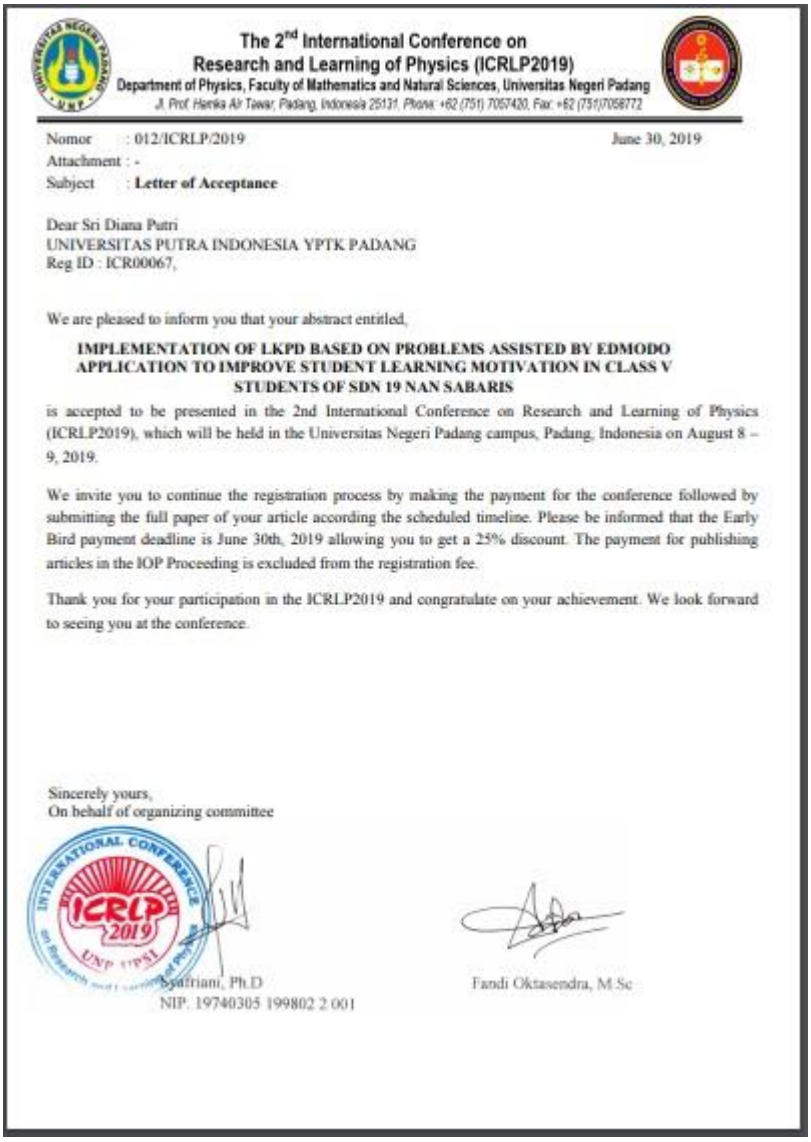
5. evaluate (evaluasi/umpan balik)

Berdasarkan hasil yang telah didapatkan, maka bahan ajar yang di buat layak untuk digunakan dalam jangkauan yang lebih luas. Penggunaan bahan ajar berbasis edmodo terbukti secara teori dan diperkuat secara statistic dapat meningkatkan keterampilan literasi sains siswa dalam pembelajaran IPA. Edmodo dapat meningkatkan minat baca, rasa ingin tahu, kemandirian dan kerjasama siswa dalam kegiatan pembelajaran yang juga ikut berdampak pada peningkatan pengetahuan siswa

D. **STATUS LUARAN**: Tuliskan jenis, identitas dan status ketercapaian setiap luaran wajib dan luaran tambahan (jika ada)yang dijanjikan pada tahun pelaksanaan penelitian. Jenis luaran dapat berupa publikasi, perolehan kekayaan intelektual, hasil pengujian atau luaran lainnya yang telah dijanjikan pada proposal. Uraian status luaran harus didukung dengan bukti kemajuan ketercapaian luaran sesuai dengan luaran yang dijanjikan. Lengkapi isian jenis luaran yang dijanjikan serta mengunggah bukti dokumen ketercapaian luaran wajib dan luaran tambahan melalui Simlitabmasmengikuti format sebagaimana terlihat pada bagian isian luaran

Luaran wajib:

The 2019 International Conference on Research and Learning Physics telah terlaksana pada hari kamis tanggal 8 Agustus 2019 bertempat di Universitas Negeri Padang.



The 2nd International Conference on
Research and Learning of Physics (ICRLP2019)
Department of Physics, Faculty of Mathematics and Natural Sciences, Universitas Negeri Padang
Jl. Prof. Hamka Air Tawar, Padang, Indonesia 25131. Phone: +62 (751) 7057420, Fax: +62 (751)7058772

Nomor : 012/ICRLP/2019 June 30, 2019
Attachment : -
Subject : **Letter of Acceptance**

Dear Sri Diana Putri
UNIVERSITAS PUTRA INDONESIA YPTK PADANG
Reg ID : ICR00067,

We are pleased to inform you that your abstract entitled,

IMPLEMENTATION OF LKPD BASED ON PROBLEMS ASSISTED BY EDMODO APPLICATION TO IMPROVE STUDENT LEARNING MOTIVATION IN CLASS V STUDENTS OF SDN 19 NAN SABARIS

is accepted to be presented in the 2nd International Conference on Research and Learning of Physics (ICRLP2019), which will be held in the Universitas Negeri Padang campus, Padang, Indonesia on August 8 – 9, 2019.

We invite you to continue the registration process by making the payment for the conference followed by submitting the full paper of your article according the scheduled timeline. Please be informed that the Early Bird payment deadline is June 30th, 2019 allowing you to get a 25% discount. The payment for publishing articles in the IOP Proceeding is excluded from the registration fee.

Thank you for your participation in the ICRLP2019 and congratulate on your achievement. We look forward to seeing you at the conference.

Sincerely yours,
On behalf of organizing committee

Syafriani, Ph.D
NIP. 19740305 199802 2 001

Fandi Oktasendra, M.Sc

Luaran tambahan: jurnal Internasional

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iJET International Journal of Emerging Technologies in Learning

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12395	11-16	SHO	Putri	IMPROVEMENT OF STUDENT SCIENCE LITERATION SKILLS THROUGH...	Awaiting assignment

1 - 1 of 1 Items

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CLICK HERE to go to step one of the five-step submission process.

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E. **PERAN MITRA:** Tuliskan realisasi kerjasama dan kontribusi Mitra baik *in-kind* maupun *in-cash* (jika ada). Bukti pendukung realisasi kerjasama dan realisasi kontribusi mitra dilaporkan sesuai dengan kondisi yang sebenarnya. Bukti dokumen realisasi kerjasama dengan Mitra diunggah melalui Simlitabmas mengikuti format sebagaimana terlihat pada bagian isian mitra

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.....
.....

F. **KENDALA PELAKSANAAN PENELITIAN**: Tuliskan kesulitan atau hambatan yang dihadapi selama melakukan penelitian dan mencapai luaran yang dijanjikan, termasuk penjelasan jika pelaksanaan penelitian dan luaran penelitian tidak sesuai dengan yang direncanakan atau dijanjikan.

Kendala yang dialami selama penelitian:

1. Kurangnya stabilitas jaringan internet saat melakukan penilitian, karena SDN 19 Nan Sabaris merupakan sekolah dengan jangkauan signal provider yang masih belum stabil. Ketika berada di dalam ruangan kelas, signal provider 3G sedangkan di luar ruangan kelas (lapangan) signal provider 4G. Akibat yang ditimbulkan dari lemahnya jaringan internet ini adalah kurang lancarnya pada proses penelusuran informasi pada aplikasi edmodo.

2. Format pendukung file yang belum cocok dengan keseluruhan file, misalnya file power point yang harus di konversi dalam format PDF.

3. Kapasitas memori hp yang digunakan peserta didik masih sangat kecil, sehingga untuk mengunggah atau mengunduh informasi sering gagal.

4. Penggunaan aplikasi Edmodo dalam pembelajaran pada peserta didik tingkat SD masih tergolong baru, maka peserta didik kurang mampu memahami menu yang tersedia di aplikasi.

G. **RENCANA TINDAKLANJUT PENELITIAN:** Tuliskan dan uraikan rencana tindaklanjut penelitian selanjutnya dengan melihat hasil penelitian yang telah diperoleh. Jika ada target yang belum diselesaikan pada akhir tahun pelaksanaan penelitian, pada bagian ini dapat dituliskan rencana penyelesaian target yang belum tercapai tersebut.

Dengan kecanggihan teknologi saat ini yang masih terus akan berkembang, maka diharapkan guru-guru dan peserta didik semakin aktif dalam menggunakan gadget di dalam pembelajaran. Untuk itu diperlukan adanya sosialisasi kepada guru-guru tentang penggunaan teknologi dalam pembelajaran, sehingga kemampuan literasi sains peserta didik akan semakin meningkat

H. DAFTAR PUSTAKA: PenyusunanDaftar Pustaka berdasarkan sistem nomor sesuai dengan urutan pengutipan. Hanya pustaka yang disitasi pada laporan akhir yang dicantumkan dalam Daftar Pustaka.

1. Abdurrahman. 2015. Guru Sains Sebagai Inovator Merancang Pembelajaran Sains Inovatif Berbasis Riset. Medika Akademi. Yogyakarta.
2. Ainiyah, Zamrotul. 2015. Penggunaan Edmodo Sebagai Media Pembelajaran E-Learning Pada Mata Pelajaran Otomatisasi Perkantoran di SMKN 1 Surabaya. Jurnal Pendidikan Administrasi Pendidikan, halaman 6.
3. Dimyati dan Mudjiono. 2009. Belajar dan Pembelajaran. Jakarta: Rineka Cipta
4. Pertiwi, R.I. 2013. Persepsi Mahasiswa tentang Penyelenggaraan Praktikum pada Pendidikan Tinggi Terbuka Jarak Jauh. Jurnal Pendidikan Terbuka dan Jarak Jauh 4(1): 45-56.
5. Riduwan. 2009. Belajar Mudah Penelitian untuk Guru, Karyawan, dan Peneliti Pemula. Bandung:Alfabeta
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10. Wursyastuti, Sri, 2008. Inovasi Pembelajaran IPA di Sekolah Dasar. Jurnal Pendidikan Dasar Nomor 9.

Dokumen pendukung luaran Wajib #1

Luaran dijanjikan: Prosiding dalam pertemuan ilmiah Internasional

Target: sudah terbit/sudah dilaksanakan
Dicapai: Submited

Dokumen wajib diunggah:
1. Naskah artikel
2. Bukti submit

Dokumen sudah diunggah:
1. Naskah artikel
2. Bukti submit

Dokumen belum diunggah:
- Sudah lengkap

Peran penulis: first author
Nama Konferensi/Seminar: The 2019 International Conference On Research And Learning Of Physics
Lembaga penyelenggara: Universitas Negeri Padang
Tempat penyelenggara: Universitas Negeri Padang
Tgl penyelenggaraan mulai: 8 Agustus 2019 | Tgl selesai: 9 Agustus 2019
Lembaga pengindeks: IOP Conference Series indexed by SCOPUS
URL website: http://icrlp.fmipa.unp.ac.id/
Judul artikel: IMPLEMENTATION OF LKPD BASED ON PROBLEMS ASSISTED BY EDMODO APPLICATION TO IMPROVE STUDENT LEARNING MOTIVATION IN CLASS V STUDENTS OF SDN 19 NAN SABARIS

IMPLEMENTATION OF LKPD BASED ON PROBLEMS ASSISTED BY EDMODO APPLICATION TO IMPROVE STUDENT LEARNING MOTIVATION IN CLASS V STUDENTS OF SDN 19 NAN SABARIS

Sri Diana Putri[1*], Mishbah Ulhusna[2], Zakirman[3]

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Abstract. Science is one of the compulsory subjects at the elementary school level. Science learning is currently not able to motivate students to be active in learning, and this can be observed at SDN 19 Nan Sabaris. This study aims to see the effect of using problem-based LKPD with the help of applications to improve science learning motivation of fifth grade students of SDN 19 Nan Sabaris. This type of research is quasi-experimental, with a sample of fifth grade students at SDN 19 Nan Sabari, Padang Pariaman Regency. The instrument of data collection in the study was a motivational questionnaire. The data analysis technique uses the t test with the type of paired sample t-test. The results of the data analysis showed the value of sig 2. Tailed for 0.0025 smaller than the alpha value = 0.05, and it can be concluded that there is a significant difference in science learning motivation between before and after the use of problem-based LKPD.

Keywords: LKPD, Problems, Edmodo, Motivation

1. Introduction

Natural science is one branch of science whose focus of study is nature, natural phenomena and the processes involved. Science learning in elementary schools is expected to be a vehicle for students to learn more about themselves and their surroundings, and the prospects for further development and can be applied in daily life. BSNP (2011) states that science is related to how to find out about nature systematically, so that science is not only mastering a collection of knowledge in the form of facts, concepts, or principles, but also a process of discovery. Science is one of the main subjects in the education curriculum in Indonesia, including at the elementary school level. Susanto (2013: 166), Natural Sciences is a human effort in understanding the universe through proper observations of targets, and using procedures, and explained with reasoning so as to get a conclusion.

The 2013 curriculum which is set at the elementary school level emphasizes thematic learning. Thematic learning is integrated learning that uses themes to link several subjects so as to provide meaningful experiences to students. Thematic learning emphasizes more on the involvement of students in the learning process actively in the learning process, so that students can gain hands-on experience and be trained to be able to discover for themselves the various knowledge they learn. Through direct experience learners will understand the concepts they learn and relate them to other concepts they have understood.

The application of thematic learning at the elementary level is one way to improve students' reasoning and thinking. Reasoning is the process of thinking done in a way to draw conclusions. General conclusions can be drawn from individual cases. Reasoning is conducting an experiment in the mind with the results at each step in the sequence of experiments that have been known by reasoners from the experience. With the ability to reason possessed by students it will increase the activities of students in building their knowledge. So students are able to compete and keep up with current technological developments.

One way to build students' knowledge is by focusing learning on students (student centers), where students are highly required to be active in finding various learning resources. Learning

resources that can be used not only from books used at school, but students can also use internet technology to obtain additional information.

Limitations that are owned by several schools cause students not to get much information in learning. SDN 19 Nan Sabaris is one of the schools that has these limitations. The learning that is taking place today is dominated by the lecture method. The dominance of the use of the lecture method is inseparable from the concept of the method which is practical and does not require a long preparation before the implementation of learning (Zakirman, Lufri & Khairani, 2019). In learning by the lecture method, students only get information from the teacher, so learning is still dominated by the teacher. This has become one of the reasons students are less able to build their own knowledge and students become bored and less motivated in learning which results in low learning outcomes.

Overcoming the problems that occur then one way is to compile a teaching material. Teaching materials that are made can be modules, worksheets, photos, videos, etc. To improve students' reasoning ability, one of the teaching materials that can be used is a problem-based module. The problems presented in the module are contextual and familiar problems that surround students. Problem-based learning is a learning model that refers to constructivist learning theory. In the constructivist view, learning is the process of forming knowledge. Knowledge is not something that has been determined, but rather a process of formation.

The use of technology in learning with the aim of increasing students' learning motivation. Edmodo is one application that can be used in learning both at school and at home. This application can be downloaded for free and can be used on smartphones or on computers so that the use of Edmodo is more practical and efficient. One of the advantages of the Edmodo application compared to other similar applications is that Edmodo is compatible on all smartphones.

Based on the problems found in SDN 19 Nan Sabaris, a study was conducted to look at the effect of using a problem-based module with the help of Edmodo to increase the activeness of students in learning science in class V.

2. Literature Review

a. Problem Based Learning

Problem-based learning (PBL) is a learning model designed in the process of solving problems faced scientifically so that students get important knowledge. Thus students are expected to be proficient in solving problems, have their own learning models and have the ability to participate in teams. PBL should meet complex, open and authentic criteria. PBL model is a learning model that uses real world problems. The problem is used as a context for students to learn critical thinking and problem solving skills, as well as to obtain essential knowledge and concepts from the subject matter.

PBL is a learning approach that begins with confronting students with problems. With all the knowledge and abilities possessed by students, they are required to solve problems that are rich in concepts. The characteristics of PBL include: 1) positioning students as self-directed problem solvers through collaborative activities, 2) encouraging students to be able to find problems and elaborate them by submitting guesses and planning solutions, 3) facilitating students to explore various alternative solutions and their implications, as well as gathering and distributing information, 4) training students to skillfully present findings, and 5) accustoming students to reflect on the effectiveness of their ways of thinking in solving problems.

b. Science in Elementary School

Science can literally be called the science of nature or which studies events that occur in nature. Natural Sciences are subjects related to knowing nature systematically. Learning objectives and the nature of science, that science can be seen as a product, process and attitude, then in learning science in elementary school must contain the 3 dimensions of science. Science learning not only teaches mastery of facts, concepts and principles about nature but also teaches methods of solving problems, practicing critical thinking skills and drawing conclusions to train to be objective, work together and respect the opinions of others. The science learning model that is suitable for elementary school age children is a learning model that adjusts the learning situation of students with real life situations in the community. Students are given the opportunity to use existing learning tools and media in their environment and apply them in their daily lives.

Science as one of the subjects in school, can provide a role and experience for students. The results of science learning can be greatly influenced by the motivation of students. Whether it's internal motivation or external motivation. Science learning is carried out with various efforts, one of which is through increased learning motivation. In terms of student learning will succeed if in itself there is a willingness to learn and the desire or encouragement to learn, because with increased learning motivation students will be moved, directed towards the attitude and behavior of students in learning, in this case learning Natural Sciences.

c. EDMODO

Edmodo is a social media platform that is often described as Facebook for schools and can function even more as needed. In addition to involving teachers and students, the social media which was founded by Nicolas Borg and Jeff O'Hara also involved parents of students to communicate with each other. Now Edmodo has grown rapidly and has around 7 million accounts.

Edmodo facilitates e-learning so learning can be done in various places. Edmodo also helps teachers who cannot teach in class by providing learning material online by uploading learning material. The teacher can give assignments that can be determined at the time of collection following assessment. Some things that can be done through Edmodo for example: Communicate, not only with students and parents but with fellow teachers in various parts of the world, discussing, sharing teaching materials, giving assignments, collecting assignments, conducting assessments. The features found on Edmodo can be seen in Table 1.

Table 1. Edmodo features

No	Fitur	Keterangan
1.	Group	This feature is used by teachers to create groups or classes in Edmodo. The teacher can add students to join groups that have been created by the teacher. The group control is on the teacher
2.	Note	used to write notes, the function of this note is the same as the teacher when speaking in front of the class. The teacher can also attach different types of files when sending notes.
3.	Alert	it functions almost the same as a note, it's just that the alerts are more concise and can't be attached to a file
4.	Assigment	teachers use to give assignments to students. the assignment can be in the form of short essays or essays. The teacher can also provide questions from sources on the internet that have been attached.
5.	Quiz	used to provide daily tests and examinations in the form of multiple choice questions. Questions must be made directly and also cannot be attached file
6.	Polling	used by teachers to find out students' opinions about something, whether related to the subject matter or other matters
7.	Library	its function is to save all the files in Edmodo. Various types of files can be stored in the library and can also be connected with the Google Drive application.
8.	Progress	teachers can see the progress of learning from their students by using this progress feature
9.	Edmodo Planner	used to make or record plans and also schedule teacher activities. Edmodo planner functions the same as a work agenda book.

d. Motivation to Learn

The word motivation comes from the word "motive", which means the reason for doing something, a force that causes someone to move to do an activity. In the Big Indonesian Dictionary, (Depdikbud, 1996: 593) motivation is defined as a drive that arises in a person

consciously or unconsciously to carry out an action with a specific purpose. While Crow, cited by A. Tabrani R (1994: 121), clarifies the importance of students' learning motivation or motivation in learning, namely that learning must be motivated in various ways so that the interests that are prioritized in learning are built from existing interests in themselves child.

According to Clayton Alderfer (in Nashar, 2004: 42) Motivation to learn is the tendency of natural learners to conduct learning activities that are driven by a desire to achieve the best possible learning achievements or results. Providing motivation to students means moving students to do something or want to do something (Sardiman A. M, 2010: 77). Therefore it is important to create certain conditions so that students are always motivated and want to continue learning. Looking at the situations and conditions, then a creative teacher must be able to increase students' learning motivation in learning by creating a learning media that can help students to be more motivated in learning.

3. Research Methods

This type of research is quasi-experimental. The study was conducted at SDN 19 Nan Sabaris. The population of this study was all students of SDN 19 Nan Sabaris registered in the 2018/2019 school year. This research was conducted in April to May 2019. The sample of this research was 21 students of class V of SDN 19 Nan Sabaris. The research instrument used in data collection was a student learning motivation evaluation questionnaire. Data analysis using paired sample t-test with the prerequisite data requirements must be normally distributed and homogeneous. The use of paired sample tests is because sample classes are only available in 1 class and analysis is done by comparing data before and after treatment is given. Conclusions are drawn based on the results of data analysis. The research hypothesis is as follows:

Ho: There is no significant difference in students' motivation to learn science between before and after being treated using problem-based LKPD

Hi: There are significant differences in students' motivation to learn science between before and after being treated using problem-based LKPD

Information:

Accept Ho if the value of sig is 2.tailed> $\alpha = 0.05$

Reject Ho if sig value 2. Tailed $<\alpha = 0.05$

4. Result and Discussion

This research is motivated by the low motivation to learn students in learning science in class V SDN 19 Nan Sabaris. To increase motivation teachers can use problem-based student worksheet with the help of the Edmodo application to stimulate student knowledge. The data collected in this study relates to the results of student questionnaire analysis before and after using a problem-based student worksheet with the help of the Edmodo application. To test the research hypothesis using a statistical analysis with the paired sample t-test equation (two average similarity test) requires the completion of a prerequisite test. The prerequisite test in question is that the two groups of data must be normally distributed and homogeneous. The following presents the results of the normality test analysis for two groups of sample class data just before the use of student worksheet products and after the implementation of student worksheet products in learning activities. Conclusion data from the results of the normality test analysis of the data groups before treatment are presented in Table 2.

Table 2. Data on normality test results before treatment

One-Sample Kolmogorov-Smirnov Test		
N		21
Normal Parameters[a]	Mean	52.7381
	Std. Deviation	8.80003
Most Extreme Differences	Absolute	.146
	Positive	.146
	Negative	-.104
Kolmogorov-Smirnov Z		.669
Asymp. Sig. (2-tailed)		.762

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Asymp. Sig. (2-tailed)		.762
a. Test distribution is Normal.		

Based on the data shown in table 2, it can be concluded that the data group before treatment can be said to be normally distributed after testing using the Kolmogorov-Smirnov equation. Data is said to be normally distributed if the sig 2. Tailed value shown is greater than the α value of 0.05. If the first data set is normally distributed, it means that the data analysis process can proceed to the next stage. Data from the analysis of the normality test for the data group after treatment is given is presented in table 3.

Table 3. Data from the Normality Test After Treatment

One-Sample Kolmogorov-Smirnov Test

N		21
Normal Parameters[a]	Mean	74.2857
	Std. Deviation	8.37193
Most Extreme Differences	Absolute	.180
	Positive	.180
	Negative	-.138
Kolmogorov-Smirnov Z		.826
Asymp. Sig. (2-tailed)		.502
a. Test distribution is Normal.		

Based on the data shown in table 3, it can be concluded that the data group before treatment can be said to be normally distributed after testing using the Kolmogorov-Smirnov equation. Data is said to be normally distributed if the value of sig 2. Tailed (0.502) shown is greater than the α value of 0.05. The first data pre-test was fulfilled, that is, the two data groups were normally distributed. Then the homogeneity test of the two groups of data is performed and the results of the analysis are presented in table 4.

Table 4. Data on Homogeneity Test Results for the Two Groups of Research Data

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.045	1	40	.833

Based on the data shown in table 4, it can be concluded that the data groups before treatment and after treatment are homogeneous. Data is said to be homogeneous if the sig 2. Tailed value shown is greater than the α value of 0.05. If all of the requirements have been fulfilled, the final stage carried out in this study is to test the effectiveness of LKPD by using the equation of the similarity test of two paired sample t-test averages. The results of the paired sample t-test test analysis are shown in table 5.

Table 5. Test Result Data Analysis Using Paired Sample t-test

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
2.15476E1	8.08069	1.763	25.22	17.86933	-12.2	20	.000

Referring to the results of the analysis of the product effectiveness test using the similarity test of two types of paired sample t-test, it can be concluded that the use of student worksheet that has been developed is statistically proven to increase students' motivation to learn science. This conclusion was drawn by comparing the sig 2 tailed value with an α value of 0.05.

The application of problem-based student worksheet in learning science can directly involve all students in learning activities. This can be observed during research activities. The application of problem-based student worksheet provides the opportunity for all students to be active in learning by involving practicum activities provided by the teacher. Learning directed in the concept of the problem-based student worksheet is learning which requires the involvement of all students to find solutions to problems by utilizing practical tools and materials provided by the teacher to answer the problem.

Student motivation also increases because of the role of the application of technology coupled in creating active learning concepts and having prior knowledge before implementing learning. Edmodo has a role in increasing students' initial understanding of the material to be taught. Students in groups can access all of the initial material that is useful later in helping students solve problems raised in science learning using problem-based student worksheet.

Edmodo is one of the technological applications designed to help teachers and students to be able to connect wherever and whenever. Edmodo can be one of the solutions so that distance learning can be carried out and students can freely access the information not only limited to smartphones but also available on computer devices. Edmodo also allows teachers to monitor who students have participated in downloading information. For elementary school level, edmodo is used as a learning stimulus and as a substitute for digital libraries where in the past research activities material, pictures and videos are inserted that can increase student interest and motivation to learn. Stages of learning using edmodo-aided problem-based student worksheets include: students collect independent study assignments in groups using the edmodo application, the teacher introduces the problem and packaging it in the form of a game, The teacher asks students to think about how to win the game (solving problems), Students discuss the results of their answers in front of the class.

The advantages of the products that have been developed include: can increase student motivation, make it easier for teachers to prepare subject matter, accustom students to follow problem-based learning patterns, introduce the application of technology to students from an early age, minimize time, in accordance with the principles of learning in elementary school.

Some of the obstacles and shortcomings that were found during the research activities using edmodo-aided problem-based student worksheets product include: difficult to apply to students with low abilities, must be supported by complete facilities and infrastructure, must rely on internet connections when using edmodo.

5. Conclusion

The use of problem-based student worksheet in learning science in edmodo-assisted elementary school is proven to be able to increase learning motivation of fifth grade students of SDN 19 Nan Sabaris. Increased motivation is driven by the necessity in learning activities where students are active and the teacher as a facilitator. In the application of edmodo-assisted problem-based student worksheet, teachers need to pay attention to the availability of internet networks and understanding of edmodo applications. In addition, teachers also need to provide direction for students to formulate hypotheses and problem solving. This problem-based student worksheet can be applied in other subjects such as social studies, PKN, ARTS with regard to the characteristics of developing teaching materials and technological concepts.

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Is Hereby Given to

Sri Diana Putri

As Presenter

at "The 2nd International Conference on Research and Learning Physics (ICRLP 2019)
in Padang, West Sumatera, Indonesia, August 8-9, 2019

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Dean

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Dokumen pendukung luaran Tambahan #1

Luaran dijanjikan: Publikasi Ilmiah Jurnal Internasional

Target: accepted/published
Dicapai: Submited

Dokumen wajib diunggah:
1.

Dokumen sudah diunggah:
1. Bukti submit

Dokumen belum diunggah:
-

Nama jurnal: International Journal of Emerging Technologies in Learning
Peran penulis: first author | EISSN: 1863-0383
Nama Lembaga Pengindek: Scopus
URL jurnal: https://www.online-journals.org/index.php/i-jet
Judul artikel: IMPROVEMENT OF STUDENT SCIENCE LITERACY SKILLS THROUGH EDMODO-BASED TEACHING MATERIALS IN LEARNING SCIENCE IN ELEMENTARY SCHOOL

IMPROVEMENT OF STUDENT SCIENCE LITERACY SKILLS THROUGH EDMODO-BASED TEACHING MATERIALS IN LEARNING SCIENCE IN ELEMENTARY SCHOOL

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ABSTRAC

Background of this research is based on the low literacy skills of Indonesian students, one of which is observed at SDN 19 Nan Sabaris. Science literacy is an important skills that need to be mastered by students in IPA learning. Science literacy skills are basic skills related to the curiosity and self-reliance of students in learning. The use of Edmodo-based teaching materials is a solution to improve student science literacy skills in science learning in elementary school. The samples in this research were 21 students of the V-grade SDN 19 Nan Sabaris. Referring to the data analysis results that have been done using the test paired sample T-Test (SIG 2. Tailed = 0.001) It can be concluded that the application of Edmodo-based teaching materials in SCIENCE learning in the V-grade SDN 19 Nan Sabaris proved to improve students ' science literacy skills.

Keywords: Edmodo, IPA, Problem-Based Learning, Science Literacy, Elementary School, Learning Technology

INTRODUCTION

Education is one of the most important things today. The important role of education is to create quality human resources, morality, and widespread and able to provide good change for the surrounding community. The enormous demands of education encourage educators and students to be able to participate in various developments in the education world.

The 21st century learning can be interpreted as learning that gives students the proficiency of 4C, which includes: (1) Communication (2) Collaboration, (3) Critical Thinking and Problem solving, and (4) Creative and Innovative. With the characteristics of the 21st century, various main competencies that must be possessed by students include learning and innovating skills, mastering media and information, and life and career abilities. [1]

Literacy skills are a very important ability today. Literacy skills is a basic ability that Indonesian people must have especially for students, both at basic education and at higher levels of education. The development of technology in Indonesia is not balanced with the capability of literacy This is shown from the low ability of community literacy in Indonesia that is far behind from neighboring countries such as Malaysia and Singapore. Low literacy skills of Indonesian people due to literacy has not become the daily culture of Indonesian society yet.

ICT Literacy is the ability to use digital technology, communication tools and or network in Define, Access, Managing, Integrate, Evaluate, Create and Communicate information well and legally to produce a new concept in order to build a knowledgeable community. Technology, information and communication, or ICT is a combination of information technology and communication technology. [2] ICT is a tool to get added value in producing information that is fast, complete, accurate, transparent and up to date.[3] The development of computer technology is currently becoming spotlight in various countries of the world as a competency that must be learned by learners to live in society and can participate in the digital world of the future and prepare to their future jobs.

Information Literacy is the ability to know when information is needed, identified, found, evaluated, and effectively uses that information for issues or issues encountered. Literacy information is the ability of one to realize that valid and complete information is the foundation for decision making, formulate information needs, identifying the potential information on the information, creating an exploring strategy, accessing information recorded in non-printed media, evaluating information, integrating new information into the science structure knowledge.[4] The importance of this information literacy is also to try the occurrence of hoaxes and the delivery of incomplete information. In learning information literacy has a very important role. Learners should look for the information that they need and summarize it so that the information they get is more memorable.

Science Literacy is the ability to use science knowledge, identify questions, and draw conclusions based on evidence, in order to understand and make decisions regarding nature and the changes done to nature through human activity.[5] The importance of literacy skills is in line with the objectives of the Trends in International Mathematics and Science Study (TIMSS). TIMSS is a series of international assessments of mathematics and science knowledge from students in different parts of the world. The students participated from a diverse collection of educational systems in terms of economic development, geographic location, and many residents. TIMSS is an indicator that shows the quality of education in Indonesia. From the results of TIMSS in 2015 Indonesia ranked 46 from the 51 countries of the TIMSS. The low result gained by Indonesia shows that it is still a lack of the ability of our learners to solve problems that include science literacy. The 5-year-old TIMSS is expected to be the encouragement of learners in Indonesia to get the top ranking of the world.

The fact of the low of students' literacy skills can be seen during learning process. Learning activities are likely to use lecture and discussion methods. Both methods have a weakness that learners only get limited information. Besides the availability of learning resources also greatly affects the ability of students literacy. The learning resources used can be books and the internet. Low literacy skills that are owned by the students will affect their reading skills. Literacy activities are not just reading but also a powerful source of motivation for learners to analyze and recall and evaluate from their reading materials. If the ability of literacy is low, it can result in a lack of curiosity that is owned by learners, so that self-learning cannot be carried out properly.

One way to improve learners ' literacy skills is by using problem-based learning methods. The PBL (problem-based learning) strategy is learning with constructivism approaches so that the learners form their own knowledge, developing higher skills and increasing self-confidence.[6] According to the constructivist theory of thinking and problem solving skills can be developed if the students do by themselves, find and move the complexity of existing knowledge.[7] By using this method, the PBL is expected to increase the motivation to learn learners.

One of the uses of technology that can be used in learning aimed at improving literacy skills and learning motivation for learners is the use of Edmodo application. Edmodo is one of those applications that can be used in learning both at school and at home. Edmodo is a social media platform that is often described as Facebook for schools and can function even more as

needed. [8] This application can be downloaded for free and can be used on smartphones or computers so that the use of Edmodo is more practical and efficient. One of the excess booster app Edmodo compared to other similar applications is Edmodo compatible on all smartphones.

Edmodo is a free service that allows lecturers/educators who can create and maintain their own community of classes securely.[9] Edmodo is developed on the basis of class management principles as well as social media. The main feature of Edmodo is the active support of the communication model of social media online, which is added with online learning materials and online evaluation features. Edmodo was first developed by Nicolas Borg and Jeff O'Hara, in which Edmodo was considered as a safe learning platform for teachers, students and social media-based schools.Edmodo provides the classroom with a safe and easy way to connect and collaborate between students and teachers to share educational content, manage projects and tasks and handle notifications of every activity.[10]

The use of smartphones is suitable for the current conditions where rapid and continuous development of information and communication (ICT) technology.[11] Mobile phones are not just a tool for communicating to others using sound, but it quickly transforms into a multi-purpose tool in wireless technologies such as personal computers.[12] Edmodo is one part of Social Network Sites (SNS) that can be utilized in a learning environment. The characteristics of SNS are as follows:

1. Build a public or semi-public profile in a restricted system,
2. Articulate the list of other users with whom they share the connection,
3. View and traverse the list of their connections and those made by others in the system.[13]

In Edmodo aplication allows one to create and recruit members in order to join a community that has been created. In the created virtual community, it is possible for each member to be connected and able to interact in a public space with privacy restricted to the entire member.

METHODOLOGY OF RESEARCH

The type of research conducted is the quasi experiment aimed at seeing the improvement of the students' science literacy skills between before and after the use of Edmodo-based teaching materials in SCIENCE studies in elementary school. Sampling techniques used is purposive

random sampling, with total samples selected as many as 21 grade V students at SDN 19 Nan Sabaris. The data analysis techniques in this study used the test paired sample T-Test in which before the test was carried out the prerequisite test carried out the normality and homogeneity tests. Data collection instruments In this study use an observation-shaped assessment sheet to observe student activity during the learning activities. Student Science literacy Skills Assessment sheet consists of 10 indicators, such as assessment of: Hypotheses, selection of tools and materials for the activities of proving/experimental, activity design, execution/implementation, data collection, observation, utilization of time, making conclusions, reflections, communication findings. The data analysis technique used is to use the T-Test paired sample test. Before testing the paired sample T-Test is done, first the data that has been collected in the test and homogenization. Conclusions in research can be taken by comparing the value of 2-tailed sig with an alpha value (0.05). Ho will be rejected if the value is sig 2. Small tailed of alpha value (0.05). Data analysis is done using SPSS app version 20.

RESULT AND DISCUSSION

This research aims to see the contribution of Edmodo-based teaching materials in improving students ' science literacy skills to science elementary school. To see the improvement of science literacy skills, data analysis strengthened by the technique Using a T-Test paired sample test. Before the test is performed, prerequisite tests are required, including:

1. Test normality

Test normality aims to see if the data group will be used as a normal distributed sample. The normality test used is the Smirnov KOLMOGORV with the results of analysis using the application SPSS version 20 as follows:

Table 1. Test Results Normality Data Before and After Treatment.

No	Variabel	Result	
		Before	After
1	N	21	21
2	Mean	58.3333	66.9048
3	Standard Deviation	9.61769	1.18940E1
4	Kolmogorov-Smirnov Z	0.667	0.800
5	Sig. (2-tailed)	0.766	0.544

Based on the results of data analysis, it can be concluded that the data before and after the treatment has been distributed normally, it is evidenced by the value of Sig 2 tailed greater than the alpha value (0.05). The conclusion that can be withdrawn from this test is that both groups of data have been distributed normally and can be continued to the next test of the structure of homogeneity.

2. Test homogeneity

Summary of the results of homogenity test as follows:

Table 2. Test Result Summary of Data Group Homogenities.

No	Variabel	Result
1	Levene Statistic	0.492
2	df1	1
3	df2	40
4	Sig.2 tailed	0.487

The main focus in homogeneity testing is the value of SIG 2. Tailed, based on table 2 it appears that a Sig 2 tailed value is greater than the alpha value (0.05), so it can be concluded that both groups are homogeneous data.

Once the two prerequisite tests are met, testing the data using the T-Test paired sample test can be resumed. Test result paired sample T-Test is presented as follows:

Table 3. SPSS Result Recapitulation Test Paired Sample T-Tes

No	Variabel	Result
1	Mean	61.119
2	Standard deviation	11.350
3	t	34.9
4	df	41
5	Sig 2 tailed	0.0000

Science literacy skills have 10 indicators, including: hypothesis submission, selection of tools and materials for proving/experimental activities, activity plan, execution/implementation, data collection, observation, time utilization, conclusion making, reflection, communication findings. Essentially, in measuring students' science literacy skills, teachers can use assessment instruments in the form of a student activity observation sheet. Assessment indicators of student science literacy skills begin to be observed when students are faced with a problem so as to require students to find an alternative solution. This opportunity confirms that science literacy skills can be enhanced by a problem-based learning plan that is implemented for each learning activity.

Problem-based learning for elementary school levels has a concept difference with a problem-based learning approach for adults. Elementary school students are not yet accustomed to conducting a high level of analysis. This is in accordance with the level of development of students expressed by Piaget, where elementary school students are in the concrete operational phase. The stage of child development in this concrete operational phase, students have a high enthusiasm for something, have a sense of curiosity that is much higher than the previous stage of development and independence in doing things. A significant increase in the learning of the students is thrust by the design of a study that engages students actively on each session.

Problem-based learning can be implemented by utilizing the technology that is available free of charge and practical to use. One of the popular and frequently used examples of technology applications is Edmodo. Edmodo is a social network that focuses on the field of education where study, Edmodo is a combination of Facebook, Instagram, email, Macromedia Flash, chat applications such as WhatsApp and Twitter. The use of Edmodo can enable students to observe, to try, to test, to and communicate. These five basic concepts have been integrated in the assessment of science literacy skills.

In general the implementation of learning using Edmodo has several advantages, including:

1. Students become motivated and have a high sense of curiosity.
2. Edmodo may allow for independent learning.
3. Edmodo has created the concept of digital learning "accessible anywhere and anytime".
4. Edmodo allows students to observe, minister, try, reason and communicate.
5. Edmodo can minimize the boredom of students in following problem-based learning.

The implementation of Edmodo-based learning has been prkatists according to teachers and students. This is reinforced by the evidence of a field interview stating that Edmodo is so easy to use and implemented in learning activities. A total of 78.12% of students agree on the use of Edmodo in learning activities can stimulate students ' curiosity to increase and provide significant effect in the independence of learning.

Edmodo can enable students to unlock extensive insight by visiting the online libraries that have been designed by the teacher before the implementation of the learning progresses. The online library becomes so practical because it is accessible to students before learning. This means that the student's initial knowledge increased after the implementation of this Edmodo-based learning. The library menus available in the Edmodo app contribute to increasing read interest and self-reliance students in learning.

High reading interest affects how hypothesized and problem solving are in learning activities. Students who already have high initial knowledge will become broader insight and knowledge in exploring the material when compared to other students. Edmodo presents a feature that supports students to be self-reliant and active in learning.
The use of Edmodo can also train students' independence in learning. Self-reliance becomes important when in the implementation of the Division focuses on the concept of active learning. Assessment on the scale of science literacy skills One of them can be seen in improving students' self-reliance. The materials are designed to support the realization of the concept of self-reliance learning in students.

The advantages of Edmodo according to students ' views are as follows:

1. The assessment conducted by the teacher is directly
2. Assessment does not take time long enough, different from the assessment of tasks that are paper and pencil test
3. The task has a time limit that is clear enough to make it possible to cultivate the student discipline attitude in work
4. Students can perform tasks wherever and whenever, without limited space and time
5. Students can submit assignments from the place where the students are without having to face the teacher directly
6. Foster a student's self-attitude in work

Some disadvantages of Edmodo, including:

1. For students who are not yet proficient in IT, it is necessary to help the task process to run in accordance with the expectations of teachers
2. The quality of the task input is very determined by the network/provider (will be less maximum on the quality of Edge/3G network)
3. Edmodo app requires a considerable phone on smartphones

In the future, it is hoped that Edmodo is no longer an application feared by teachers and students who have not been tech literate. Edmodo has been designed to be as practical as possible to facilitate users in their use in learning activities. The use of Edmodo can be adjusted to the learning approach chosen and where the learning objectives will be directed. If teachers want to improve skills such as science literacy skills, problem solving skills, critical thinking, colabirative and communication, teachers can design a learning concept with a problem-based Edmodo application (Edmodo-Problem Based learning). Problem-based learning accommodates the ability to propose hypotheses, find solutions, implement proof and draw conclusions. In the near term, it is expected that Edmodo has been recognized by every teacher and can be implemented in learning

CONCLUSION

Edmodo-based teaching materials are a teaching material that is designed with problem-based learning concepts to improve students' science literacy skills for SCIENCE learning in elementary school. Edmodo is designed to improve learning quality and maximize the ease of use for each learning execution. The use of Edmodo-based materials proved theoretically and strengthened statistic can improve students' science literacy skills in SCIENCE learning. Edmodo can increase interest in reading, curiosity, independence and student cooperation in learning activities that also contribute to the improvement of student knowledge. Edmodo is a flexible application that can be used on all subjects. The features of Edmodo are always updated annually so that it can be deduced Edmodo always keep up with the times. Edmodo is an application that allows digital-based learning and enables teachers and students to conduct learning. Fore expected every teacher can make Edmodo as one of the main options to improve the quality of learning.

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Tgl penyelenggaraan mulai: 8 Agustus 2019 | Tgl selesai: 9 Agustus 2019
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Judul artikel: IMPLEMENTATION OF LKPD BASED ON PROBLEMS ASSISTED BY EDMODO APPLICATION TO IMPROVE STUDENT LEARNING MOTIVATION IN CLASS V STUDENTS OF SDN 19 NAN SABARIS

IMPLEMENTATION OF LKPD BASED ON PROBLEMS ASSISTED BY EDMODO APPLICATION TO IMPROVE STUDENT LEARNING MOTIVATION IN CLASS V STUDENTS OF SDN 19 NAN SABARIS

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Abstract. Science is one of the compulsory subjects at the elementary school level. Science learning is currently not able to motivate students to be active in learning, and this can be observed at SDN 19 Nan Sabaris. This study aims to see the effect of using problem-based LKPD with the help of applications to improve science learning motivation of fifth grade students of SDN 19 Nan Sabaris. This type of research is quasi-experimental, with a sample of fifth grade students at SDN 19 Nan Sabari, Padang Pariaman Regency. The instrument of data collection in the study was a motivational questionnaire. The data analysis technique uses the t test with the type of paired sample t-test. The results of the data analysis showed the value of sig 2. Tailed for 0.0025 smaller than the alpha value = 0.05, and it can be concluded that there is a significant difference in science learning motivation between before and after the use of problem-based LKPD.

Keywords: LKPD, Problems, Edmodo, Motivation

1. Introduction

Natural science is one branch of science whose focus of study is nature, natural phenomena and the processes involved. Science learning in elementary schools is expected to be a vehicle for students to learn more about themselves and their surroundings, and the prospects for further development and can be applied in daily life. BSNP (2011) states that science is related to how to find out about nature systematically, so that science is not only mastering a collection of knowledge in the form of facts, concepts, or principles, but also a process of discovery. Science is one of the main subjects in the education curriculum in Indonesia, including at the elementary school level. Susanto (2013: 166), Natural Sciences is a human effort in understanding the universe through proper observations of targets, and using procedures, and explained with reasoning so as to get a conclusion.

The 2013 curriculum which is set at the elementary school level emphasizes thematic learning. Thematic learning is integrated learning that uses themes to link several subjects so as to provide meaningful experiences to students. Thematic learning emphasizes more on the involvement of students in the learning process actively in the learning process, so that students can gain hands-on experience and be trained to be able to discover for themselves the various knowledge they learn. Through direct experience learners will understand the concepts they learn and relate them to other concepts they have understood.

The application of thematic learning at the elementary level is one way to improve students' reasoning and thinking. Reasoning is the process of thinking done in a way to draw conclusions. General conclusions can be drawn from individual cases. Reasoning is conducting an experiment in the mind with the results at each step in the sequence of experiments that have been known by reasoners from the experience. With the ability to reason possessed by students it will increase the activities of students in building their knowledge. So students are able to compete and keep up with current technological developments.

One way to build students' knowledge is by focusing learning on students (student centers), where students are highly required to be active in finding various learning resources. Learning

resources that can be used not only from books used at school, but students can also use internet technology to obtain additional information.

Limitations that are owned by several schools cause students not to get much information in learning. SDN 19 Nan Sabaris is one of the schools that has these limitations. The learning that is taking place today is dominated by the lecture method. The dominance of the use of the lecture method is inseparable from the concept of the method which is practical and does not require a long preparation before the implementation of learning (Zakirman, Lufri & Khairani, 2019). In learning by the lecture method, students only get information from the teacher, so learning is still dominated by the teacher. This has become one of the reasons students are less able to build their own knowledge and students become bored and less motivated in learning which results in low learning outcomes.

Overcoming the problems that occur then one way is to compile a teaching material. Teaching materials that are made can be modules, worksheets, photos, videos, etc. To improve students' reasoning ability, one of the teaching materials that can be used is a problem-based module. The problems presented in the module are contextual and familiar problems that surround students. Problem-based learning is a learning model that refers to constructivist learning theory. In the constructivist view, learning is the process of forming knowledge. Knowledge is not something that has been determined, but rather a process of formation.

The use of technology in learning with the aim of increasing students' learning motivation. Edmodo is one application that can be used in learning both at school and at home. This application can be downloaded for free and can be used on smartphones or on computers so that the use of Edmodo is more practical and efficient. One of the advantages of the Edmodo application compared to other similar applications is that Edmodo is compatible on all smartphones.

Based on the problems found in SDN 19 Nan Sabaris, a study was conducted to look at the effect of using a problem-based module with the help of Edmodo to increase the activeness of students in learning science in class V.

2. Literature Review

a. Problem Based Learning

Problem-based learning (PBL) is a learning model designed in the process of solving problems faced scientifically so that students get important knowledge. Thus students are expected to be proficient in solving problems, have their own learning models and have the ability to participate in teams. PBL should meet complex, open and authentic criteria. PBL model is a learning model that uses real world problems. The problem is used as a context for students to learn critical thinking and problem solving skills, as well as to obtain essential knowledge and concepts from the subject matter.

PBL is a learning approach that begins with confronting students with problems. With all the knowledge and abilities possessed by students, they are required to solve problems that are rich in concepts. The characteristics of PBL include: 1) positioning students as self-directed problem solvers through collaborative activities, 2) encouraging students to be able to find problems and elaborate them by submitting guesses and planning solutions, 3) facilitating students to explore various alternative solutions and their implications, as well as gathering and distributing information, 4) training students to skillfully present findings, and 5) accustoming students to reflect on the effectiveness of their ways of thinking in solving problems.

b. Science in Elementary School

Science can literally be called the science of nature or which studies events that occur in nature. Natural Sciences are subjects related to knowing nature systematically. Learning objectives and the nature of science, that science can be seen as a product, process and attitude, then in learning science in elementary school must contain the 3 dimensions of science. Science learning not only teaches mastery of facts, concepts and principles about nature but also teaches methods of solving problems, practicing critical thinking skills and drawing conclusions to train to be objective, work together and respect the opinions of others. The science learning model that is suitable for elementary school age children is a learning model that adjusts the learning situation of students with real life situations in the community. Students are given the opportunity to use existing learning tools and media in their environment and apply them in their daily lives.

Science as one of the subjects in school, can provide a role and experience for students. The results of science learning can be greatly influenced by the motivation of students. Whether it's internal motivation or external motivation. Science learning is carried out with various efforts, one of which is through increased learning motivation. In terms of student learning will succeed if in itself there is a willingness to learn and the desire or encouragement to learn, because with increased learning motivation students will be moved, directed towards the attitude and behavior of students in learning, in this case learning Natural Sciences.

c. EDMODO

Edmodo is a social media platform that is often described as Facebook for schools and can function even more as needed. In addition to involving teachers and students, the social media which was founded by Nicolas Borg and Jeff O'Hara also involved parents of students to communicate with each other. Now Edmodo has grown rapidly and has around 7 million accounts.

Edmodo facilitates e-learning so learning can be done in various places. Edmodo also helps teachers who cannot teach in class by providing learning material online by uploading learning material. The teacher can give assignments that can be determined at the time of collection following assessment. Some things that can be done through Edmodo for example: Communicate, not only with students and parents but with fellow teachers in various parts of the world, discussing, sharing teaching materials, giving assignments, collecting assignments, conducting assessments. The features found on Edmodo can be seen in Table 1.

Table 1. Edmodo features

No	Fitur	Keterangan
1.	Group	This feature is used by teachers to create groups or classes in Edmodo. The teacher can add students to join groups that have been created by the teacher. The group control is on the teacher
2.	Note	used to write notes, the function of this note is the same as the teacher when speaking in front of the class. The teacher can also attach different types of files when sending notes.
3.	Alert	it functions almost the same as a note, it's just that the alerts are more concise and can't be attached to a file
4.	Assigment	teachers use to give assignments to students. the assignment can be in the form of short essays or essays. The teacher can also provide questions from sources on the internet that have been attached.
5.	Quiz	used to provide daily tests and examinations in the form of multiple choice questions. Questions must be made directly and also cannot be attached file
6.	Polling	used by teachers to find out students' opinions about something, whether related to the subject matter or other matters
7.	Library	its function is to save all the files in Edmodo. Various types of files can be stored in the library and can also be connected with the Google Drive application.
8.	Progress	teachers can see the progress of learning from their students by using this progress feature
9.	Edmodo Planner	used to make or record plans and also schedule teacher activities. Edmodo planner functions the same as a work agenda book.

d. Motivation to Learn

The word motivation comes from the word "motive", which means the reason for doing something, a force that causes someone to move to do an activity. In the Big Indonesian Dictionary, (Depdikbud, 1996: 593) motivation is defined as a drive that arises in a person

consciously or unconsciously to carry out an action with a specific purpose. While Crow, cited by A. Tabrani R (1994: 121), clarifies the importance of students' learning motivation or motivation in learning, namely that learning must be motivated in various ways so that the interests that are prioritized in learning are built from existing interests in themselves child.

According to Clayton Alderfer (in Nashar, 2004: 42) Motivation to learn is the tendency of natural learners to conduct learning activities that are driven by a desire to achieve the best possible learning achievements or results. Providing motivation to students means moving students to do something or want to do something (Sardiman A. M, 2010: 77). Therefore it is important to create certain conditions so that students are always motivated and want to continue learning. Looking at the situations and conditions, then a creative teacher must be able to increase students' learning motivation in learning by creating a learning media that can help students to be more motivated in learning.

3. Research Methods

This type of research is quasi-experimental. The study was conducted at SDN 19 Nan Sabaris. The population of this study was all students of SDN 19 Nan Sabaris registered in the 2018/2019 school year. This research was conducted in April to May 2019. The sample of this research was 21 students of class V of SDN 19 Nan Sabaris. The research instrument used in data collection was a student learning motivation evaluation questionnaire. Data analysis using paired sample t-test with the prerequisite data requirements must be normally distributed and homogeneous. The use of paired sample tests is because sample classes are only available in 1 class and analysis is done by comparing data before and after treatment is given. Conclusions are drawn based on the results of data analysis. The research hypothesis is as follows:

Ho: There is no significant difference in students' motivation to learn science between before and after being treated using problem-based LKPD

Hi: There are significant differences in students' motivation to learn science between before and after being treated using problem-based LKPD

Information:

Accept Ho if the value of sig is 2.tailed> $\alpha = 0.05$

Reject Ho if sig value 2. Tailed $<\alpha = 0.05$

4. Result and Discussion

This research is motivated by the low motivation to learn students in learning science in class V SDN 19 Nan Sabaris. To increase motivation teachers can use problem-based student worksheet with the help of the Edmodo application to stimulate student knowledge. The data collected in this study relates to the results of student questionnaire analysis before and after using a problem-based student worksheet with the help of the Edmodo application. To test the research hypothesis using a statistical analysis with the paired sample t-test equation (two average similarity test) requires the completion of a prerequisite test. The prerequisite test in question is that the two groups of data must be normally distributed and homogeneous. The following presents the results of the normality test analysis for two groups of sample class data just before the use of student worksheet products and after the implementation of student worksheet products in learning activities. Conclusion data from the results of the normality test analysis of the data groups before treatment are presented in Table 2.

Table 2. Data on normality test results before treatment

One-Sample Kolmogorov-Smirnov Test		
N		21
Normal Parameters[a]	Mean	52.7381
	Std. Deviation	8.80003
Most Extreme Differences	Absolute	.146
	Positive	.146
	Negative	-.104
Kolmogorov-Smirnov Z		.669
Asymp. Sig. (2-tailed)		.762

One-Sample Kolmogorov-Smirnov Test		
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Kolmogorov-Smirnov Z		.669
Asymp. Sig. (2-tailed)		.762
a. Test distribution is Normal.		

Based on the data shown in table 2, it can be concluded that the data group before treatment can be said to be normally distributed after testing using the Kolmogorov-Smirnov equation. Data is said to be normally distributed if the sig 2. Tailed value shown is greater than the α value of 0.05. If the first data set is normally distributed, it means that the data analysis process can proceed to the next stage. Data from the analysis of the normality test for the data group after treatment is given is presented in table 3.

Table 3. Data from the Normality Test After Treatment

One-Sample Kolmogorov-Smirnov Test

N		21
Normal Parameters[a]	Mean	74.2857
	Std. Deviation	8.37193
Most Extreme Differences	Absolute	.180
	Positive	.180
	Negative	-.138
Kolmogorov-Smirnov Z		.826
Asymp. Sig. (2-tailed)		.502
a. Test distribution is Normal.		

Based on the data shown in table 3, it can be concluded that the data group before treatment can be said to be normally distributed after testing using the Kolmogorov-Smirnov equation. Data is said to be normally distributed if the value of sig 2. Tailed (0.502) shown is greater than the α value of 0.05. The first data pre-test was fulfilled, that is, the two data groups were normally distributed. Then the homogeneity test of the two groups of data is performed and the results of the analysis are presented in table 4.

Table 4. Data on Homogeneity Test Results for the Two Groups of Research Data

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.045	1	40	.833

Based on the data shown in table 4, it can be concluded that the data groups before treatment and after treatment are homogeneous. Data is said to be homogeneous if the sig 2. Tailed value shown is greater than the α value of 0.05. If all of the requirements have been fulfilled, the final stage carried out in this study is to test the effectiveness of LKPD by using the equation of the similarity test of two paired sample t-test averages. The results of the paired sample t-test test analysis are shown in table 5.

Table 5. Test Result Data Analysis Using Paired Sample t-test

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
2.15476E1	8.08069	1.763	25.22	17.86933	-12.2	20	.000

Referring to the results of the analysis of the product effectiveness test using the similarity test of two types of paired sample t-test, it can be concluded that the use of student worksheet that has been developed is statistically proven to increase students' motivation to learn science. This conclusion was drawn by comparing the sig 2 tailed value with an α value of 0.05.

The application of problem-based student worksheet in learning science can directly involve all students in learning activities. This can be observed during research activities. The application of problem-based student worksheet provides the opportunity for all students to be active in learning by involving practicum activities provided by the teacher. Learning directed in the concept of the problem-based student worksheet is learning which requires the involvement of all students to find solutions to problems by utilizing practical tools and materials provided by the teacher to answer the problem.

Student motivation also increases because of the role of the application of technology coupled in creating active learning concepts and having prior knowledge before implementing learning. Edmodo has a role in increasing students' initial understanding of the material to be taught. Students in groups can access all of the initial material that is useful later in helping students solve problems raised in science learning using problem-based student worksheet.

Edmodo is one of the technological applications designed to help teachers and students to be able to connect wherever and whenever. Edmodo can be one of the solutions so that distance learning can be carried out and students can freely access the information not only limited to smartphones but also available on computer devices. Edmodo also allows teachers to monitor who students have participated in downloading information. For elementary school level, edmodo is used as a learning stimulus and as a substitute for digital libraries where in the past research activities material, pictures and videos are inserted that can increase student interest and motivation to learn. Stages of learning using edmodo-aided problem-based student worksheets include: students collect independent study assignments in groups using the edmodo application, the teacher introduces the problem and packaging it in the form of a game, The teacher asks students to think about how to win the game (solving problems), Students discuss the results of their answers in front of the class.

The advantages of the products that have been developed include: can increase student motivation, make it easier for teachers to prepare subject matter, accustom students to follow problem-based learning patterns, introduce the application of technology to students from an early age, minimize time, in accordance with the principles of learning in elementary school.

Some of the obstacles and shortcomings that were found during the research activities using edmodo-aided problem-based student worksheets product include: difficult to apply to students with low abilities, must be supported by complete facilities and infrastructure, must rely on internet connections when using edmodo.

5. Conclusion

The use of problem-based student worksheet in learning science in edmodo-assisted elementary school is proven to be able to increase learning motivation of fifth grade students of SDN 19 Nan Sabaris. Increased motivation is driven by the necessity in learning activities where students are active and the teacher as a facilitator. In the application of edmodo-assisted problem-based student worksheet, teachers need to pay attention to the availability of internet networks and understanding of edmodo applications. In addition, teachers also need to provide direction for students to formulate hypotheses and problem solving. This problem-based student worksheet can be applied in other subjects such as social studies, PKN, ARTS with regard to the characteristics of developing teaching materials and technological concepts.

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Luaran dijanjikan: Prosiding dalam pertemuan ilmiah Internasional

Target: sudah terbit/sudah dilaksanakan
Dicapai: Submited

Dokumen wajib diunggah:
1.

Dokumen sudah diunggah:
1. Naskah artikel

Dokumen belum diunggah:
-

Peran penulis: first author
Nama Konferensi/Seminar: The 2019 International Conference On Research And Learning Of Physics
Lembaga penyelenggara: Universitas Negeri Padang
Tempat penyelenggara: Universitas Negeri Padang
Tgl penyelenggaraan mulai: 9 Agustus 2019 | Tgl selesai: 8 September 2019
Lembaga pengindeks: IOP Conference Series indexed by SCOPUS
URL website: http://icrlp.fmipa.unp.ac.id/
Judul artikel: IMPLEMENTATION OF LKPD BASED ON PROBLEMS ASSISTED BY EDMODO APPLICATION TO IMPROVE STUDENT LEARNING MOTIVATION IN CLASS V STUDENTS OF SDN 19 NAN SABARIS

IMPLEMENTATION OF LKPD BASED ON PROBLEMS ASSISTED BY EDMODO APPLICATION TO IMPROVE STUDENT LEARNING MOTIVATION IN CLASS V STUDENTS OF SDN 19 NAN SABARIS

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Abstract. Science is one of the compulsory subjects at the elementary school level. Science learning is currently not able to motivate students to be active in learning, and this can be observed at SDN 19 Nan Sabaris. This study aims to see the effect of using problem-based LKPD with the help of applications to improve science learning motivation of fifth grade students of SDN 19 Nan Sabaris. This type of research is quasi-experimental, with a sample of fifth grade students at SDN 19 Nan Sabari, Padang Pariaman Regency. The instrument of data collection in the study was a motivational questionnaire. The data analysis technique uses the t test with the type of paired sample t-test. The results of the data analysis showed the value of sig 2. Tailed for 0.0025 smaller than the alpha value = 0.05, and it can be concluded that there is a significant difference in science learning motivation between before and after the use of problem-based LKPD.

Keywords: LKPD, Problems, Edmodo, Motivation

1. Introduction

Natural science is one branch of science whose focus of study is nature, natural phenomena and the processes involved. Science learning in elementary schools is expected to be a vehicle for students to learn more about themselves and their surroundings, and the prospects for further development and can be applied in daily life. BSNP (2011) states that science is related to how to find out about nature systematically, so that science is not only mastering a collection of knowledge in the form of facts, concepts, or principles, but also a process of discovery. Science is one of the main subjects in the education curriculum in Indonesia, including at the elementary school level. Susanto (2013: 166), Natural Sciences is a human effort in understanding the universe through proper observations of targets, and using procedures, and explained with reasoning so as to get a conclusion.

The 2013 curriculum which is set at the elementary school level emphasizes thematic learning. Thematic learning is integrated learning that uses themes to link several subjects so as to provide meaningful experiences to students. Thematic learning emphasizes more on the involvement of students in the learning process actively in the learning process, so that students can gain hands-on experience and be trained to be able to discover for themselves the various knowledge they learn. Through direct experience learners will understand the concepts they learn and relate them to other concepts they have understood.

The application of thematic learning at the elementary level is one way to improve students' reasoning and thinking. Reasoning is the process of thinking done in a way to draw conclusions. General conclusions can be drawn from individual cases. Reasoning is conducting an experiment in the mind with the results at each step in the sequence of experiments that have been known by reasoners from the experience. With the ability to reason possessed by students it will increase the activities of students in building their knowledge. So students are able to compete and keep up with current technological developments.

One way to build students' knowledge is by focusing learning on students (student centers), where students are highly required to be active in finding various learning resources. Learning

resources that can be used not only from books used at school, but students can also use internet technology to obtain additional information.

Limitations that are owned by several schools cause students not to get much information in learning. SDN 19 Nan Sabaris is one of the schools that has these limitations. The learning that is taking place today is dominated by the lecture method. The dominance of the use of the lecture method is inseparable from the concept of the method which is practical and does not require a long preparation before the implementation of learning (Zakirman, Lufri & Khairani, 2019). In learning by the lecture method, students only get information from the teacher, so learning is still dominated by the teacher. This has become one of the reasons students are less able to build their own knowledge and students become bored and less motivated in learning which results in low learning outcomes.

Overcoming the problems that occur then one way is to compile a teaching material. Teaching materials that are made can be modules, worksheets, photos, videos, etc. To improve students' reasoning ability, one of the teaching materials that can be used is a problem-based module. The problems presented in the module are contextual and familiar problems that surround students. Problem-based learning is a learning model that refers to constructivist learning theory. In the constructivist view, learning is the process of forming knowledge. Knowledge is not something that has been determined, but rather a process of formation.

The use of technology in learning with the aim of increasing students' learning motivation. Edmodo is one application that can be used in learning both at school and at home. This application can be downloaded for free and can be used on smartphones or on computers so that the use of Edmodo is more practical and efficient. One of the advantages of the Edmodo application compared to other similar applications is that Edmodo is compatible on all smartphones.

Based on the problems found in SDN 19 Nan Sabaris, a study was conducted to look at the effect of using a problem-based module with the help of Edmodo to increase the activeness of students in learning science in class V.

2. Literature Review

a. Problem Based Learning

Problem-based learning (PBL) is a learning model designed in the process of solving problems faced scientifically so that students get important knowledge. Thus students are expected to be proficient in solving problems, have their own learning models and have the ability to participate in teams. PBL should meet complex, open and authentic criteria. PBL model is a learning model that uses real world problems. The problem is used as a context for students to learn critical thinking and problem solving skills, as well as to obtain essential knowledge and concepts from the subject matter.

PBL is a learning approach that begins with confronting students with problems. With all the knowledge and abilities possessed by students, they are required to solve problems that are rich in concepts. The characteristics of PBL include: 1) positioning students as self-directed problem solvers through collaborative activities, 2) encouraging students to be able to find problems and elaborate them by submitting guesses and planning solutions, 3) facilitating students to explore various alternative solutions and their implications, as well as gathering and distributing information, 4) training students to skillfully present findings, and 5) accustoming students to reflect on the effectiveness of their ways of thinking in solving problems.

b. Science in Elementary School

Science can literally be called the science of nature or which studies events that occur in nature. Natural Sciences are subjects related to knowing nature systematically. Learning objectives and the nature of science, that science can be seen as a product, process and attitude, then in learning science in elementary school must contain the 3 dimensions of science. Science learning not only teaches mastery of facts, concepts and principles about nature but also teaches methods of solving problems, practicing critical thinking skills and drawing conclusions to train to be objective, work together and respect the opinions of others. The science learning model that is suitable for elementary school age children is a learning model that adjusts the learning situation of students with real life situations in the community. Students are given the opportunity to use existing learning tools and media in their environment and apply them in their daily lives.

Science as one of the subjects in school, can provide a role and experience for students. The results of science learning can be greatly influenced by the motivation of students. Whether it's internal motivation or external motivation. Science learning is carried out with various efforts, one of which is through increased learning motivation. In terms of student learning will succeed if in itself there is a willingness to learn and the desire or encouragement to learn, because with increased learning motivation students will be moved, directed towards the attitude and behavior of students in learning, in this case learning Natural Sciences.

c. EDMODO

Edmodo is a social media platform that is often described as Facebook for schools and can function even more as needed. In addition to involving teachers and students, the social media which was founded by Nicolas Borg and Jeff O'Hara also involved parents of students to communicate with each other. Now Edmodo has grown rapidly and has around 7 million accounts.

Edmodo facilitates e-learning so learning can be done in various places. Edmodo also helps teachers who cannot teach in class by providing learning material online by uploading learning material. The teacher can give assignments that can be determined at the time of collection following assessment. Some things that can be done through Edmodo for example: Communicate, not only with students and parents but with fellow teachers in various parts of the world, discussing, sharing teaching materials, giving assignments, collecting assignments, conducting assessments. The features found on Edmodo can be seen in Table 1.

Table 1. Edmodo features

No	Fitur	Keterangan
1.	Group	This feature is used by teachers to create groups or classes in Edmodo. The teacher can add students to join groups that have been created by the teacher. The group control is on the teacher
2.	Note	used to write notes, the function of this note is the same as the teacher when speaking in front of the class. The teacher can also attach different types of files when sending notes.
3.	Alert	it functions almost the same as a note, it's just that the alerts are more concise and can't be attached to a file
4.	Assigment	teachers use to give assignments to students. the assignment can be in the form of short essays or essays. The teacher can also provide questions from sources on the internet that have been attached.
5.	Quiz	used to provide daily tests and examinations in the form of multiple choice questions. Questions must be made directly and also cannot be attached file
6.	Polling	used by teachers to find out students' opinions about something, whether related to the subject matter or other matters
7.	Library	its function is to save all the files in Edmodo. Various types of files can be stored in the library and can also be connected with the Google Drive application.
8.	Progress	teachers can see the progress of learning from their students by using this progress feature
9.	Edmodo Planner	used to make or record plans and also schedule teacher activities. Edmodo planner functions the same as a work agenda book.

d. Motivation to Learn

The word motivation comes from the word "motive", which means the reason for doing something, a force that causes someone to move to do an activity. In the Big Indonesian Dictionary, (Depdikbud, 1996: 593) motivation is defined as a drive that arises in a person

consciously or unconsciously to carry out an action with a specific purpose. While Crow, cited by A. Tabrani R (1994: 121), clarifies the importance of students' learning motivation or motivation in learning, namely that learning must be motivated in various ways so that the interests that are prioritized in learning are built from existing interests in themselves child.

According to Clayton Alderfer (in Nashar, 2004: 42) Motivation to learn is the tendency of natural learners to conduct learning activities that are driven by a desire to achieve the best possible learning achievements or results. Providing motivation to students means moving students to do something or want to do something (Sardiman A. M, 2010: 77). Therefore it is important to create certain conditions so that students are always motivated and want to continue learning. Looking at the situations and conditions, then a creative teacher must be able to increase students' learning motivation in learning by creating a learning media that can help students to be more motivated in learning.

3. Research Methods

This type of research is quasi-experimental. The study was conducted at SDN 19 Nan Sabaris. The population of this study was all students of SDN 19 Nan Sabaris registered in the 2018/2019 school year. This research was conducted in April to May 2019. The sample of this research was 21 students of class V of SDN 19 Nan Sabaris. The research instrument used in data collection was a student learning motivation evaluation questionnaire. Data analysis using paired sample t-test with the prerequisite data requirements must be normally distributed and homogeneous. The use of paired sample tests is because sample classes are only available in 1 class and analysis is done by comparing data before and after treatment is given. Conclusions are drawn based on the results of data analysis. The research hypothesis is as follows:

Ho: There is no significant difference in students' motivation to learn science between before and after being treated using problem-based LKPD

Hi: There are significant differences in students' motivation to learn science between before and after being treated using problem-based LKPD

Information:

Accept Ho if the value of sig is 2.tailed> $\alpha = 0.05$

Reject Ho if sig value 2. Tailed $<\alpha = 0.05$

4. Result and Discussion

This research is motivated by the low motivation to learn students in learning science in class V SDN 19 Nan Sabaris. To increase motivation teachers can use problem-based student worksheet with the help of the Edmodo application to stimulate student knowledge. The data collected in this study relates to the results of student questionnaire analysis before and after using a problem-based student worksheet with the help of the Edmodo application. To test the research hypothesis using a statistical analysis with the paired sample t-test equation (two average similarity test) requires the completion of a prerequisite test. The prerequisite test in question is that the two groups of data must be normally distributed and homogeneous. The following presents the results of the normality test analysis for two groups of sample class data just before the use of student worksheet products and after the implementation of student worksheet products in learning activities. Conclusion data from the results of the normality test analysis of the data groups before treatment are presented in Table 2.

Table 2. Data on normality test results before treatment

One-Sample Kolmogorov-Smirnov Test		
N		21
Normal Parameters[a]	Mean	52.7381
	Std. Deviation	8.80003
Most Extreme Differences	Absolute	.146
	Positive	.146
	Negative	-.104
Kolmogorov-Smirnov Z		.669
Asymp. Sig. (2-tailed)		.762

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a. Test distribution is Normal.		

Based on the data shown in table 2, it can be concluded that the data group before treatment can be said to be normally distributed after testing using the Kolmogorov-Smirnov equation. Data is said to be normally distributed if the sig 2. Tailed value shown is greater than the α value of 0.05. If the first data set is normally distributed, it means that the data analysis process can proceed to the next stage. Data from the analysis of the normality test for the data group after treatment is given is presented in table 3.

Table 3. Data from the Normality Test After Treatment

One-Sample Kolmogorov-Smirnov Test

N		21
Normal Parameters[a]	Mean	74.2857
	Std. Deviation	8.37193
Most Extreme Differences	Absolute	.180
	Positive	.180
	Negative	-.138
Kolmogorov-Smirnov Z		.826
Asymp. Sig. (2-tailed)		.502
a. Test distribution is Normal.		

Based on the data shown in table 3, it can be concluded that the data group before treatment can be said to be normally distributed after testing using the Kolmogorov-Smirnov equation. Data is said to be normally distributed if the value of sig 2. Tailed (0.502) shown is greater than the α value of 0.05. The first data pre-test was fulfilled, that is, the two data groups were normally distributed. Then the homogeneity test of the two groups of data is performed and the results of the analysis are presented in table 4.

Table 4. Data on Homogeneity Test Results for the Two Groups of Research Data

Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
.045	1	40	.833

Based on the data shown in table 4, it can be concluded that the data groups before treatment and after treatment are homogeneous. Data is said to be homogeneous if the sig 2. Tailed value shown is greater than the α value of 0.05. If all of the requirements have been fulfilled, the final stage carried out in this study is to test the effectiveness of LKPD by using the equation of the similarity test of two paired sample t-test averages. The results of the paired sample t-test test analysis are shown in table 5.

Table 5. Test Result Data Analysis Using Paired Sample t-test

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Upper			
2.15476E1	8.08069	1.763	25.22	17.86933	-12.2	20	.000

Referring to the results of the analysis of the product effectiveness test using the similarity test of two types of paired sample t-test, it can be concluded that the use of student worksheet that has been developed is statistically proven to increase students' motivation to learn science. This conclusion was drawn by comparing the sig 2 tailed value with an α value of 0.05.

The application of problem-based student worksheet in learning science can directly involve all students in learning activities. This can be observed during research activities. The application of problem-based student worksheet provides the opportunity for all students to be active in learning by involving practicum activities provided by the teacher. Learning directed in the concept of the problem-based student worksheet is learning which requires the involvement of all students to find solutions to problems by utilizing practical tools and materials provided by the teacher to answer the problem.

Student motivation also increases because of the role of the application of technology coupled in creating active learning concepts and having prior knowledge before implementing learning. Edmodo has a role in increasing students' initial understanding of the material to be taught. Students in groups can access all of the initial material that is useful later in helping students solve problems raised in science learning using problem-based student worksheet.

Edmodo is one of the technological applications designed to help teachers and students to be able to connect wherever and whenever. Edmodo can be one of the solutions so that distance learning can be carried out and students can freely access the information not only limited to smartphones but also available on computer devices. Edmodo also allows teachers to monitor who students have participated in downloading information. For elementary school level, edmodo is used as a learning stimulus and as a substitute for digital libraries where in the past research activities material, pictures and videos are inserted that can increase student interest and motivation to learn. Stages of learning using edmodo-aided problem-based student worksheets include: students collect independent study assignments in groups using the edmodo application, the teacher introduces the problem and packaging it in the form of a game, The teacher asks students to think about how to win the game (solving problems), Students discuss the results of their answers in front of the class.

The advantages of the products that have been developed include: can increase student motivation, make it easier for teachers to prepare subject matter, accustom students to follow problem-based learning patterns, introduce the application of technology to students from an early age, minimize time, in accordance with the principles of learning in elementary school.

Some of the obstacles and shortcomings that were found during the research activities using edmodo-aided problem-based student worksheets product include: difficult to apply to students with low abilities, must be supported by complete facilities and infrastructure, must rely on internet connections when using edmodo.

5. Conclusion

The use of problem-based student worksheet in learning science in edmodo-assisted elementary school is proven to be able to increase learning motivation of fifth grade students of SDN 19 Nan Sabaris. Increased motivation is driven by the necessity in learning activities where students are active and the teacher as a facilitator. In the application of edmodo-assisted problem-based student worksheet, teachers need to pay attention to the availability of internet networks and understanding of edmodo applications. In addition, teachers also need to provide direction for students to formulate hypotheses and problem solving. This problem-based student worksheet can be applied in other subjects such as social studies, PKN, ARTS with regard to the characteristics of developing teaching materials and technological concepts.

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Is Hereby Given to

Sri Diana Putri

As Presenter

at "The 2nd International Conference on Research and Learning Physics (ICRLP 2019)
in Padang, West Sumatera, Indonesia, August 8-9, 2019

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