

Research Article

Development of Web-based Online Learning Media Using Google Sites to Increase Student Motivation and Learning Outcomes on Elasticity Material

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Google sites help in increasing student motivation and learning outcomes due to online learning. The research objective is to develop web-based online learning media using the Google site on elasticity material and to test its feasibility in increasing student's motivation and learning outcomes, which is limited to the cognitive domain, starting at the level of C1 until C4. This study uses research and development methods and refers to the 4D model (define, design, develop, disseminate). The participants in the study were students of class XI IPA 2 of MAN 2 Cilegon. The instruments used include, validation sheets, observation sheets, documentation (attendance, task collection data, transcripts, etc.), questionnaire sheets, and tests. Data were analyzed using communication and processed using the scores obtained in percentages. The results showed that at the define stage, students admit they feel bored doing online learning and feel that the material provided by the teacher is difficult to understand. The media designing starts from making flowcharts, storylines, learning scenarios, compiling material, and practice questions, then combining them into online learning media based on google sites. The development stage includes material and media validation (93.5%), product trials (84.4%), and product revision. The last stage was disseminating results online learning using Google sites, which was carried out very well (92.8%), student learning motivation was high (82.4%) and student learning outcomes had increased as seen from the n-gain 0.6 medium interpretation, $t_{count} 20.1305$, $t_{table} 2.028$ ($t_{count} > t_{table}$).

Keywords: google sites, student motivation, learning outcomesCorresponding Author: Ade Yeti Nuryantini; email: ade.yeti@uinsgd.ac.id**Published:** 3 April 2024

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1. INTRODUCTION

In 2020 the world experienced a Covid-19 pandemic, which resulted in school conducting online learning. Circular letter of 2020 NO. 4 issued by the Minister of Education and Culture of the Republic of Indonesia contains regulations regarding online learning activities carried out at home. Teacher/lecturers must ensure that their students continue to carry out learning activities even if only at home [1].

Teacher an important role as motivator in learning activities in school, so teacher must grow and motivate their students. Students who are highly motivated to learn will get good result from the learning process they go through, while students who do not have good learning motivation will not get good results either [2]. The reduced learning motivation of students in online learning is indicated by the lack of active students and only a few participating in the learning process [3]. Factors that lead to decreased learning motivation of students include: difficulty concentrating, confusion, loneliness, difficulty sleeping, easily tired and stressed [4].

Government regulations that require learning from home are in line with the digital era 21 to change a new paradigm for education, which emphasizes the use of technology in classroom learning [5]. The application of improving information and communication technology, online learning systems adopt e-learning systems which are expected to be able to overcome problems related to space and time during the learning process [6]. However, some of the obstacles in online learning are the limited quota and the lack of knowledge of educators in applying online media [7].

Preliminary studies at MAN 2 Cilegon were conducted by interviewing physics teacher and students, learning observations, and giving open questionnaires to students. Interviews with teacher explained that initially learning was carried out using two methods, namely online and offline, but because Cilegon City became an orange zone during the pandemic, learning was changed to online as a whole. Online learning was originally using school e-learning, but due to frequent overloads, most teachers switched to using WhatsApp Group, Google Classroom, and Zoom Meeting. The problem that often occurs online is that it is difficult for students to access learning media due limited signals and quotas. Meanwhile, interviews with students complained about the obstacles experienced during online learning including: difficulty in accessing the internet in some areas of the student's homes, declining grades due to poorly understood learning materials, and feeling confused when given new learning media. Learning observations were carried out by observing learning activities carried out by teachers and students through WhatsApp Group or Zoom Meeting, some students were absent

without clear information, students did not participate less in the learning process, the lack of response when the teacher was asking about learning materials, some students do not collect assignments given by the teacher so that it affects the learning outcomes obtained, and students complain when their quota will soon run out. An open questionnaire was given to all students of class X MIPA MAN 2 Cilegon, many students complained that online learning the material provided was difficult to understand. Because teachers use WhatsApp, e-learning, and the Quipper learning application more often, students feel bored that the learning process is only filled with reading material and giving assignments. Some students admitted that they prefer to do learning using the Quipper because the material is easy to understand, even though the material is not given directly from the teacher but is provided by the application. Students also expect the provision of material through animated videos so that the material is easy to understand, coupled with making games so that the learning atmosphere is more created and not easily bored.

In addition to decreased learning motivation, students of MAN 2 Cilegon also had low learning outcomes, seen when researchers did PPL-SDR students got cognitive score with an average of 48.8 because students were not motivated to learn, it resulted in low learning outcomes. The low learning outcomes of students are reinforced by the results of test questions carried out in two classes consisting of 12 multiple choice items on elasticity material. The results of the test questions are presented in the following Table 1.

TABLE 1: Test results for elasticity materials.

Class	Average Value	Interpretation
XII IPA 2	58.5	Medium
XII IPA 3	48.3	Low

In connection with the above problems, it turns out that teachers have not optimized the online learning media used for the learning process. Teachers deliver material only through text on WhatsApp and e-learning, while students prefer to do learning through media that do not only contain text, but combined with image and videos. Learning media whose use utilizes internet access and can be combined between text, image, and videos, one of which is the web, an educational service that allows the realization of edutainment by using internet [8] According to Rusman (2012) learning activities using the web called web based learning are learning activities that utilize media sites such as websites that can be accessed using the internet network. Web based learning is another example of the application of learning where teaching materials and delivery methods use the internet [9]. Generally, the web is written in HTML format and can

contain text, images, audio, and others [10]. The web is made with various programming languages, such as Java, C, Python, etc [11]. However, Google offers an easy and free website creation service called Google Sites. Google sites are easy to create because they do not require expertise in programming languages [12]. Apart from being used for web creation, Google Sites can also link to other Google platforms such as Google Form, Google Document, YouTube, and so on [13]. Researchers developed learning media based on google sites which contained learning activities from beginning to end, learning instructions in the form of text, learning materials in the form of videos, LKPD to practice questions. One learning meeting is presented in one web page so that students are not confused and just scroll through the screen of their phone or laptop. This research uses physics learning about elasticity. In the 2013 curriculum, elasticity material is found in class XII odd semester at SMA/MA level.

Based on the described background, the researcher intends to design a study entitled “Development of Web-Based Online Learning Media Using Google Sites to Increase Student Motivation and Learning Outcomes on Elasticity Materials” with research objectives 1) Feasibility of web-based online learning media using google sites that have been developed on elasticity material, 2) Implementation of web-based learning using google sites as online learning media on elasticity material, 3) Profile of student’s learning motivation after web-based learning using google sites on elasticity material, and 4) Increase student learning outcomes after web-based learning using google sites on elasticity material.

2. RESEARCH method

The method used is Research and Development (RnD). Research and Development is a research method used to produce or test the effectiveness of the product [14]. This study refers to the 4D (four-D) model. The 4D research and development model has 4 main stages, namely: Define, Design, Develop, Disseminate [15]. The define stage is the stage to define the requirements needed in research and development. The define stage includes five stage, namely: front-end-analysis, learner analysis, concept analysis, task analysis, and specifying instructional objective. After the material has been collected, the next stage is the design for manufacture of web-based learning media.

Thiagarajan divides the development stage into two stages, namely expert appraisal and development testing. At the expert appraisal stage, the designed media will be validated or assessed for the feasibility of the product design and then evaluated by expert in their fields. While development testing is the stage of testing the product design to

the real target subject. In the disseminate stage, the product is implemented to students to find out the implementation of learning using google sites media. Furthermore, the assessment to determine the profile of learning motivation using questionnaires and documentation given to students. Learning outcomes were obtained from test conducted before and after learning using google sites with a one group pretest-posttest research design.

In this study, two types of data were used, namely qualitative data and quantitative data. Qualitative data were obtained from validation sheets in the form of suggestions and criticism from media experts, material experts, and physics teacher who validated the media, criticism and suggestions in the form of descriptive narration provided in the comments column on the validation sheet. Quantitative data obtained from media validation sheets, observation sheets, test, questionnaires, and documentation. The data used in this study is primary data, namely data taken directly by researchers through data collection in the field.

The instruments used in this study include several types of instruments, including: 1) Validation sheet. Validation sheet are used to obtain feasibility data from web-based online learning media using google sites. Validation sheet in the form of a questionnaire conducted for material and media validation. The material validation sheet was adopted from Cahyono (2019) and the media validation sheet was adopted from Kalvadema (2017). The material validity test will be carried out by material experts and media validity tests will be carried out by media experts. The validation sheet uses a likert scale which is expressed in the form of answer ranging from not good to very good. 2) Observation sheet.

The observation sheet is used to determine the implementation of elasticity learning using web-based learning media. The observation sheet contains the stages of learning with answer choices that are not implemented until they are carried out very well. In addition, there is a description column for observed to add descriptions at each learning stage. 3) Documentation. Documentation is used to obtain data on student's learning motivation after learning to use the web. Documentation is the data needed to support variables in the form of absences, list of assignment collections, transcripts, notes, and so on. 4) Questionnaire. Aspects of learning motivation cannot be measured using only analytical documents, to support four aspects of learning motivation that cannot be seen from the documentation, a questionnaire containing questions about student's learning motivation is used. The questionnaire sheet used in the study was in the form of a closed ended questionnaire which was filled out through student responses. 5) Test. The test is used to measure the increase in student learning outcomes in the cognitive

domain. In the cognitive domain a written test with 12 pretest and posttest questions was used in the form of multiple choice questions.

The data to be analyzed in this study are validity sheet, observation sheet, documentation, questionnaires, and tests. Communicative data is processed by processing the scores obtained and will produce a percentage. The percentage interpreted according to the range of values for each data.

The participant in this study were all class XI IPA 2 MAN 2 Cilegon. The place of research was conducted at MAN 2 Cilegon, which is located at Jl. Keserangan Link. Bujanggadung, Rawaarum Village, Grogol District, Cilegon City, Banten Province. The research was conducted for three weeks starting on October 18 2021 until November 2 2021 which was carried out online. Elasticity learning using google sites was carried out for five meetings.

3. result and discussion

The method used is Research and Development and research design refers to the 4D design initiated by Thiagarajan. The 4D design has four stage, namely define, design, develop, and disseminate.

3.1. Define

The define stage is the stage of defining the requirements needed before developing learning media. The define stage is carried out by paying attention to observing and adjusting the need to support learning students. There are five main steps to carry out the define stage, 1) front-end analysis, the front-end analysis was carried out aiming to find out the problems experienced in conducting online learning in school during the pandemic so that the development of learning media was needed, researchers feel the lack of motivation to learn students to do online learning, one of factor that influence it is because the learning media used by teachers are only limited to WhatsApp groups, 2) student analysis, an activity to analyze the characteristics of students who are the target of developing learning media, the analysis characteristics such as learning style, academic ability, motivation and interest in learning, individual skills at the time of learning, researchers observed students using online learning motivation questionnaires through Google Form, students claimed to feel bored doing online class and felt the material provided by the teacher was difficult to understand, 3) concept analysis, concept analysis is carried out to achieve the objectives of a lesson by examining the basic competencies

in the material that will be made learning media, basic competence in elasticity material is found in KD 3.3 Analyzing the elasticity properties of materials in daily life, and KD 4.3 Conducting experiments on the elasticity properties of a material along with presentation of experimental results and their use, 4) task analysis, the main task that students do is to be able to analyze the elastic properties of a material, researchers make several student worksheets regarding the main tasks that must be mastered by students to achieve the specified minimum competencies, researchers also provides practice questions at each meeting which aims to determine the extent to which student understand after carrying out learning activities, 5) specifying instructional objectives, to be achieved after carrying out a series of learning activities. Learning objectives are formulated by looking at the basic competencies in the material to be taught.

3.2. Design

The second stage in 4D research is design. At this stage the material that has been collected is then designed in the media that will be developed. Media design starts from making flowchart, storyline, learning scenario, compiling material and practice questions, then combining them into online learning media based on Google Sites. Online learning with web media based on Google Sites was carried out for five meetings. Two meetings were used for pretest and posttest while three meetings were used for online learning using web media. During online learning, students open a web link created by researcher.

Each student conducts learning from beginning to the end of the meeting via the web. Starting from opening (greeting, praying before studying, attendance, apperception, delivery of learning objectives), core activities (providing material, doing worksheets, discussion), and closing activities (summary of material, doing practice question, conclusion, praying after learning, and greeting) is loaded in full on the web. One meeting is on one web page so that student can take part in learning by scrolling through their smartphone or laptop screens without switching pages.

3.3. Develop

After defining the curriculum, designing material and practice question, designing media, and so on, the next stage is development. The development stage includes material and media validation, product testing, and product revision. Media validation

was carried out by three validators, namely material experts, media experts, and physics teacher.

TABLE 2: Feasibility test material and media.

Aspect	Score		
	Material Expert	Media Expert	Physics Teacher
MatePreliminary	100%	-	100%
Content	66%	-	95.8%
Evaluation	75%	-	100%
MediDisplay	-	94.6%	96.4%
Completeness	-	100%	100%
Media Benefit	-	100%	100%
Average	76.8%	96.8%	98%
Interpretation	Very Feasible	Very Feasible	Very Feasible

The average feasibility of online learning media using google sites from the validation test of material experts, media experts, and physics teacher is 93.5% with a very feasible interpretation, this is comparable to research conducted by Bambang Setyawan regarding google sites media used for guidance classical gets a feasibility rate of 93% with a very feasible interpretation [12].

In addition to conducting a validity test, to determine the feasibility of the media, product trials were also carried out to students in class XI IPA 1 with a small scale of 15 students. The product trial results get a feasibility value if 84.4% with a very feasible interpretation. This is line with research conducted by Ardian Asyhari and Rahma Diani (2017) that product trials were carried out with a sample of 15 people and obtained 94.6% results with very good interpretation [16].

The validation test for material and media is not only in the form of quantitative data, but there is also qualitative data, namely the provision of suggestion from the validator to improve material and media. After the validation test was carried out on the validator and product testing for the students, the next step was to improve the media in accordance with the suggestions from the validator.

3.4. Disseminate

The disseminate stage is the stage of implementing the media in schools. The implementation of the media is carried out in class XI IPA 2 and is carried out online. At the disseminate stage, data on the implementation of learning using web media were obtained, data on increasing students learning motivation and data on increasing student learning outcomes on elasticity material.

3.5. Implementation of online learning using google sites

Learning is carried out online using web media for approximately three weeks. Learning begins on October 18 2021 until November 3 2021 and is carried out for five meetings. Two meetings were used for test and three meetings were used for learning activities.

The implementation at the first meeting went very good. The lowest aspect of the 5M approach at first meeting is in the asking activity, 80% teacher activities and 80% student activities. Asking is an activity carried out by expressing curiosity about an object by asking a question to the teacher orally or writing [17]. The highest aspect of the 5M approach at first meeting is observing and communicating with the percentage of teacher and students of 100%. The teacher gives directions to conduct an experiment and students follow the experiment well. After working on the LKPD the teacher asks students to communicate the results of their work on a discussion forum and students communicate very well. Communicating activities are carried out by describing and conveying the results obtained to be addressed to others in oral and written form with the help of technological tools [17].

The implementation at the second meeting went very good. At the second meeting the lowest 5M aspect was found in collect information activities with the percentage of teachers being 90% and students 80%. Collecting information related to object by reading books, collecting secondary data, observations, practicums, and so on with the aim that students can test hypotheses [17]. The highest aspect if the 5M approach at second meeting was in observing, asking, and communicating activities with a percentage of 100% on teacher and student observations.

TABLE 3: Implementation online learning using google sites.

Implementation stage	1 st Meeting		2 nd Meeting		3 rd Meeting	
	Teacher	Students	Teacher	Students	Teacher	Students
Preliminary	96%	88%	96%	92%	96%	96%
Observe	100%	100%	100%	100%	100%	100%
Ask	80%	80%	100%	100%	80%	100%
Collect Information	90%	100%	90%	80%	100%	90%
Associate	80%	90%	90%	90%	100%	90%
Communicate	100%	100%	100%	100%	100%	100%
Closing	96%	88%	96%	88%	96%	92%
Average	91.7%	92.2%	96%	92.8%	96%	95.4%
Interpretation	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good

The implementation at third meeting went very good. The lowest aspect of the 5M approach at third meeting is in the asking aspect with 80% of teacher activities. While the highest aspect is in observing and communicating activities with the percentage of teacher and student activities being 100%.

3.6. Profile student's learning motivation

When conducting a preliminary study, students experience decreased motivation seen from several factors, including: students feel confused when doing online learning, feel unable to understand the teacher’s explanation, find it difficult to concentrate, feel lonely doing online learning activities, and so on. Researchers develop learning media that are easily do online learning and can concentrate because each meeting is presented on one web page, students also do not feel confused about doing online learning activities.

This study uses four aspects of learning motivation which were initiated by Chernis & Goleman [18]. The four aspects are the drive to achieve something, commitment, initiative, and optimism [3]. These four aspects are broken down into several indicators, including the following:

TABLE 4: Indicators of learning motivation.

Aspects of Learning Motivation	Indicator
The drive to achieve something	Have a curiosity about physics learning material Trying to get the best score
Commitment	Attendance during learning The seriousness of students in doing assignments Participate in learning activities from beginning to end
Initiative	Asking questions to the teacher of friends about the material that has not been understood Answering questions from teacher or friends
Optimism	Trying to find solutions to the problems encountered Feeling confident that he is able to solve the problem at hand Feeling confident that you will get good grades Don't think negative

The instruments used in this study to determine the profile of student’s learning motivation using documentation and questionnaires. Documentation is used to view the profile of learning motivation in the form of data. The data used include: list of attendees, activity list, and task collection list. While the questionnaire is used to see the profile of student’s learning motivation which cannot be seen using data. A summary of the value of student’s learning motivation is presented in the Table 5.

The average student’s learning motivation is 82.4% with a high interpretation. There are three students with medium learning motivation, 29 students with high learning

TABLE 5: Student's motivation learning.

Value	Interpretation	Frequency	Percentage
0	Very Low	0	0%
1-33	Low	0	0%
34-66	Medium	3	8%
67-99	High	29	81%
100	Very High	4	11%
Total		36	100%
Average		82.4%	
Interpretation		High	

motivation, and four students with very high learning motivation. Similar to the research conducted by Putri Umairah and Zulfah regarding increasing learning motivation in the midst of the covid-19 pandemic that the average student's learning motivation became 87.83% with high interpretation after online learning was carried out in google classroom[19].

3.7. Increase learning outcomes

The increase in student learning outcomes on the elasticity material can be seen from the pretest and posttest score. The test is in the form of multiple choice questions as many 12 items according to the indicators of competency achievement in the elasticity material. From the pretest and posttest values, the n gain value is the sought to determine the increase in student learning outcomes. Overall the value of n gain from the pretest and posttest is 0.6 with a medium interpretation. Similarly, research conducted by Abdul Wahab et al (2021) got the value of n gain 0.62 with medium interpretation [20].

In additional to being calculated as a whole, the value of n gain is also sought based on the sub-material. In the sub-material elasticity and the magnitudes of the elasticity, the value of n gain is 0.54 with medium interpretation. In the sub-material of Hooke's law and series-parallel spring circuit, the value of n gain is 0.4 with medium interpretation. While in the sub application of elasticity in daily life, the value of n gain is 0.7 with a high interpretation. The value of n gain from cognitive indicators of learning outcomes C1-C4 is as follow: C1 with n gain of 0.43 medium category, C2 with n gain of 0.58 medium category, C3 with n gain of 0.37 medium category, and C4 with n gain of 0.53 medium category. The highest value of n gain on cognitive indicators is found in C2 understanding because C2 is included in the low cognitive level.

The increase in student learning outcomes is also seen using hypothesis testing. Before testing the hypothesis, a normality test was conducted to determine whether the pretest and posttest data were normally distributed or not. The results of the normality test using the Kolmogorov-Smirnov test that the value of $D_{max} < K_{table}$ in the pretest and posttest, which means the data is normally distributed. Because the data is normally distributed, then the parametric statistical test using paired t test with two way significance level is >0.05 [21]. The results of t_{count} 20.1305 and t_{table} 2.028 mean $t_{count} > t_{table}$. In conclusion, H_0 is rejected and H_1 is accepted that there is an increase in student learning outcomes on elasticity material using web media of google sites. The results of motivational data with learning outcomes are related to each other. High learning motivation will have an impact on high learning outcomes as well. This is in line with research conducted by Ricardo and Rini Intansari Meilani (2017) that there is a significant influence between interest and learning motivation on student learning outcomes simultaneously or partially [22].

4. CONCLUSION

Based on research on the development of web-based online learning media using Google Sites to increase student's motivation and learning outcomes on elasticity material, the following conclusions are drawn: 1) at the define stage, students admit they feel bored doing online learning and feel that the material provided by the teacher is difficult to understand. 2) Then media design start from making flowchart, storyline, learning scenario, compiling material and practice questions, then combining them into online learning media based on google sites. 3) At the development stage include material and media validation (93.5%), product trials (84.4%), and product revision. 4) The last stage is disseminate result online learning using google sites was carried out very well (92.8%), student learning motivation is high (82.4%) and student learning outcomes have increased as seen from the n-gain 0.6 medium interpretation, the sub-material of elasticity and the magnitudes of elasticity n gain is 0.54 medium category, n gain sub-material of Hooke's law and series-parallel spring circuit is 0.4 medium category, and n gain of sub-material of applying elasticity in daily life is 0.7 high category. The value of n gain is C1 0.43 in the medium category, C2 0.58 in the medium category, C3 0.37 in the medium category, C4 0.53 in the medium category. And test the hypothesis t_{count} 20.1305 while t_{table} 2.025 ($t_{count} > t_{table}$) which means that there is an increase in student learning outcomes using web media on elasticity material.

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References

- [1] Atsani LG. "Transformasi media pembelajaran pada masa Pandemi Covid-19.," Seminar Nasional Ilmu Pendidikan dan Multi Disiplin. vol. 4, no. 1, pp. 263–268, 2021.
- [2] Romlah S, Nugraha N, Nurjanah S, Setiawan W. Analisis motivasi belajar siswa SD Al Barokah 448 Bandung dengan menggunakan media ICT berbasis for VBA Excel pada materi garis bilangan. *Jurnal Cendekia: Jurnal Pendidikan Matematika*. 2019;3(1):221.
- [3] Cahyani A, Listiana ID, Larasati SP. "Motivasi belajar siswa SMA pada pembelajaran daring di masa Pandemi Covid-19.," *IQ (Ilmu Al-qur'an)*. *Jurnal Pendidikan Islam*. 2020;3(01):123–40.
- [4] Suryaningsih A. Peningkatan motivasi belajar siswa secara online pada pelajaran animasi 2D melalui strategi komunikasi persuasif. *Ideguru: Jurnal Karya Ilmiah Guru*. 2020;5(1):10.
- [5] Efriani E, Dewantara JA, Afandi A. "Pemanfaatan aplikasi discord sebagai media pembelajaran online.," *Jurnal Teknologi Informasi dan Pendidikan*. vol. 13, no. 1, pp. 61–65, 2020. <https://doi.org/10.24036/tip.v13i1.283>.
- [6] Susilo PH, Rohman MG. "Efektivitas sistem pembelajaran online sebagai media pembelajaran berbasis aplikasi web di era milenial.," In: *Seminar Nasional Sistem Informasi 2019.*, Malang (2019).
- [7] Arizona K, Abidin Z, Rumansyah R. Pembelajaran online berbasis proyek salah satu solusi kegiatan belajar mengajar di tengah Pandemi Covid-19. *Jurnal Ilmiah Profesi Pendidikan*. 2020;5(1):64–70.
- [8] Januarisman E, Ghufron A. Pengembangan media pembelajaran berbasis web mata pelajaran Ilmu Pengetahuan Alam untuk siswa kelas VII. *Jurnal Inovasi Teknologi Pendidikan*. 2016;3(2):166.

- [9] Yani A. "Pengaruh media Model Hybrid berbasis Web Enhanced Course terhadap pembelajaran Fisika.," *Jurnal Sains dan Pendidikan Fisika (JSPF)*. vol. 13, no. 3, pp. 224–230, 2017.
- [10] Firmansyah R. Web klarifikasi berita untuk meminimalisir penyebaran berita hoax. *Jurnal Informatika*. 2017;4:230–5.
- [11] Lestanti S, Susana AD. Sistem pengarsipan dokumen guru dan pegawai menggunakan Metode Mixture Modelling berbasis Web. *Antivirus: Jurnal Ilmiah Teknik Informatika*. 2016;10(2):72.
- [12] Setyawan B. Pengembangan Media Google Site dalam bimbingan klasikal di SMAN 1 Sampung. *Nusantara of Research: Jurnal Hasil-hasil Penelitian Universitas Nusantara PGRI Kediri*. 2019;6(2):78–87.
- [13] Cahya W, Mutholib EA. Analisis perancangan sistem monitoring kehadiran karyawan Stasiun MRT Fatmawati [JUNSIBI]. *Jurnal Sistem Informasi Bisnis*. 2020;1(2):65–72.
- [14] Sugiyono PD. *Metode penelitian pendidikan*. Bandung: Alfabeta; 2015.
- [15] Thiagarajan S, Semmel DS, Semmel MI. *Instructional development for training teacher of exceptional children*. Bloomington (Indiana): Indiana University; 1974.
- [16] Asyhari A, Diani R. Pembelajaran fisika berbasis web enhanced course: mengembangkan web-logs pembelajaran fisika dasar I. *Jurnal Inovasi Teknologi Pendidikan*. 2017;4(1):13.
- [17] Fitri AA, Palupi LR, Karenina A. "Profil bahan ajar dan perangkat pembelajaran pada mata pelajaran IPA kelas VIII Di SMPN 1 Balong.," In: *Annual Virtual Conference of Education and Science (AVES., Ponorogo (2021)*.
- [18] Cherniss C, Goleman D. The emotionally intelligent workplace: how to select for, measure, and improve emotional intelligence in individuals, groups, and organizations. *Adm Soc Work*. 2002;27(3):107–14.
- [19] P. Umairah and Zulfah, "Peningkatan motivasi belajar menggunakan 'Google Classroom' ditengah Pandemi Covid-19 Pada peserta didik Kelas XI IPS 4 SMAN 1 Bangkinang Kota," *Jurnal Ekonomi. Sosial & Humaniora*. 2020;2(5):119–27.
- [20] Wahab A, Junaedi J, Azhar M. Efektivitas pembelajaran statistika pendidikan menggunakan uji peningkatan N-Gain di PGMI. *Jurnal Basicedu*. 2021;5(2):1039–45.
- [21] Sugiyono, *Statistika untuk Penelitian*. Alfabeta, Bandung, 2017.
- [22] Ricardo R, Meilani RI. Impak minat dan motivasi belajar terhadap hasil belajar siswa. *Jurnal Pendidikan Manajemen Perkantoran*. 2017;2(2):79.