



## The Development of EduPlasa Media Learning Devices in Static Fluid Materials

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### ABSTRACT

This study aims to develop learning devices for EduPlasa media in static fluid material. The research method used is descriptive method with a quantitative approach. The research subjects were students of class XI MIPA 4, amounting to 24 people in state senior high school Banda Aceh. Data collection techniques in the form of questionnaires validation media experts, content and learning tools and documentation. The results of the study indicate that the learning device for EduPlasa media is effectively used. This can be seen from the results of the percentage of media rated by experts at 81.5%, the percentage of media content assessed by experts as much as 85% and the responses of students about the media reached 86.68% so that the media can be said to be suitable for use in learning. Development of learning tools for EduPlasa media in the form of learning implementation plans (RPP), student worksheets (LKPD), power points as supporters of interactive media. The results of validation by evaluation experts and practitioners for RPP and LKPD obtained an assessment of 75% so that the learning device met the criteria of valid, practical and effective use.

**Keywords:** learning device, EduPlasa media, static fluid

### INTRODUCTION

The 2013 curriculum requires students to be active in the learning process while the teacher acts as a facilitator. Achieving good quality learning if good learning devices are available. Munthe (2009) states that improving the quality of learning of a teacher is so strategic because the teacher functions as the spearhead of change (the agent of change) from being unable to be able, from not mastering to mastering, from not understanding to understanding, through the learning process. In addition, Sanjaya (2010) said that the factors of students, facilities, tools and media available, as well as environmental factors, can also influence the learning process. Therefore the importance of a learning device is supported by media that are able to attract students to learn.

Based on the Decree of the Minister of National Education Number: 36 / D / 0/2001 what is meant by the development of teaching materials is the result of innovative development of substantial teaching material in the form of textbooks, dictates, modules, practical instructions, models, tools, audio visuals, tutorial texts. Learning tools developed include, Syllabus, RPP, Textbooks, Practical Guidebooks, Student Worksheets (LKPD), and Tests.

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### **Problem of Research**

Development of learning devices is a process or activity carried out to produce a learning device based on development theory while learning devices are all tools and materials used by teachers to carry out the learning process (Gunada, 2015).

Research on the development of learning devices has been carried out with Setting Guided Inquiry (Jaya, 2014), Geogebra (Adi, 2014), Sets (Candra, 2015), Problem Based Learning Models (Saputra, 2018), Guided Discovery models (Sumiadi, 2016), realistic approach (Aulia, 2017), Problem Based Instruction model (Diani, 2015), PhET Media Simulation (Siregar, 2016) screencast-o-matic media (Kurniawan, 2017), and STAD Type Cooperative Model with Media Powerpoint Ispring (Suprapti, 2016).

To improve the quality of learning and optimize the effectiveness of the learning process, the teacher needs to make breakthroughs and steps to overcome the problems faced. One of them is by developing learning devices. Learning tools developed include syllabus, learning implementation plans (RPP), student worksheets (LKPD) and assessment instruments. Development of good learning tools is expected to be able to provide opportunities for students to explore knowledge (Jaya, 2014).

Prastowo (2013: 206) states that the purpose of compiling and using Student Worksheets (LKS) for learning includes presenting teaching materials that make it easier for students to interact with the material provided, presenting tasks that enhance students' mastery of the material provided, train learners' independence and make it easier for educators to give assignments to students.

### **Research Focus**

EduPlasa High School Physics Media on Static Fluid material can be downloaded on Google Playstore, specially designed by experts. This EduPlasa publication application is produced by PT StarDev Lintas Nusa. EduPlasa, one of Winnertech's subsidiaries. The applications in EduPlasa are interactive animation content, video tutorials, BSE ebooks (electronic student books) and other educational applications that can be accessed anywhere and anytime without the need for an internet connection. (Winnertech: 2013). A similar application with EduPlasa media is PesonaEdu which contains animated and interactive simulations that are beautiful, clear, and contextual, so that they are easily understood by students (Pesona Edu, 2010).

EduPlasa Physics High School application of Static Fluid material can also be a medium / media to help students actively participate in building their knowledge, supported by explanations by the teacher and giving student worksheets (LKPD) so the authors make use of media, LKPD and Implementation Plans Learning (RPP) which has been validated by experts. Based on the description of the background above, there have been many studies on the development of media learning devices but so far no studies have used EduPlasa media as a supporting device, especially in static fluid material. Therefore it is necessary to do in-depth research on this subject with the title "Development of EduPlasa Media Learning Devices in Static Fluid Materials".

## METHODOLOGY OF RESEARCH

### General Background of Research

The type of research used is an experiment with a quantitative approach.

### Sample of Research

The population in this study were all students in Banda Aceh 7 Senior High School consisting of 5 XI MIPA classes. The sample selection in this study used a non-random method, namely Purposive Sampling. From the scattered population, samples were selected, namely class XI MIPA 4.

### Instrument and Procedures

Data collection techniques in this study were questionnaire and documentation methods. Non-test instruments are questionnaires validated by experts.

### Data Analysis

Qualitative descriptive analysis techniques in this study were used to analyze the feasibility of learning media. The collected data is processed by adding up, compared to the expected number and obtained by the percentage (Arikunto, 2006). The next step is to describe and draw conclusions about each indicator from the media expert's assessment, content and evaluation as well as the response of students. Product eligibility criteria are developed by referring to the media eligibility criteria by the modified BSNP. The percentage of interactive media feasibility by respondents is calculated by the following formula (Sudijono, 2009):

$$p = f/N \times 100 \%$$

Information:

P = Percentage of interactive media eligibility

f = number of average score aspects of assessment

n = the maximum number of scoring aspects

The criteria for evaluating the average score and the percentage of student questionnaire responses according to Sudijono (2009) are based on the following table.

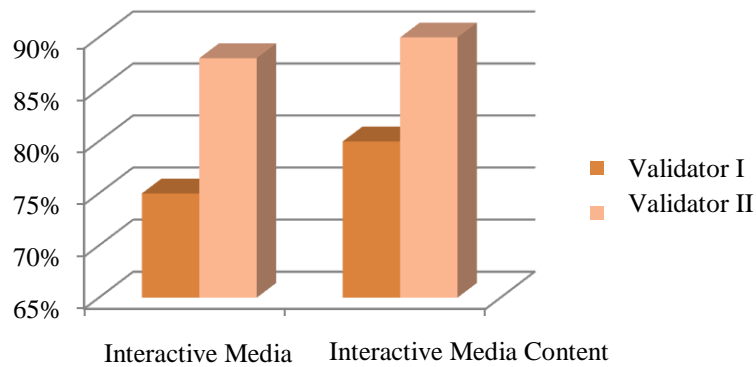
**Table 1.** Percentage of assessment scores

| Percentage Range | Criteria    |
|------------------|-------------|
| 85% - 100%       | Very Good   |
| 70% - 84%        | Good        |
| 55% - 69%        | Good Enough |
| 40% - 54%        | Poor        |

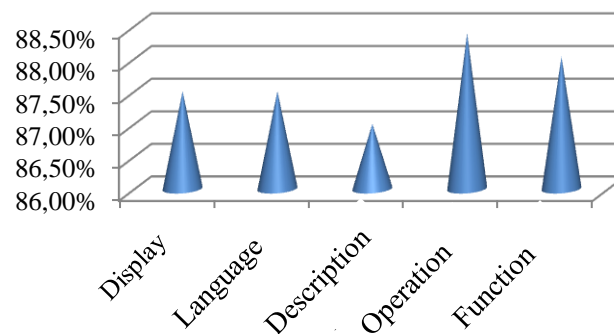
Based on the assessment criteria in the table above, it can be concluded that interactive media is feasible to use if the score is  $\geq 70\%$ .

### RESULTS AND DISCUSSION

This study aims to develop EduPlasa media learning devices in static fluid material. EduPlasa media has been validated by the validator with media expert assessment of 81.5% and 85% content, the response of students to the media is 86.68% and LKPD and RPP are 75%. The percentage of EduPlasa media validation results is presented in the following diagram:

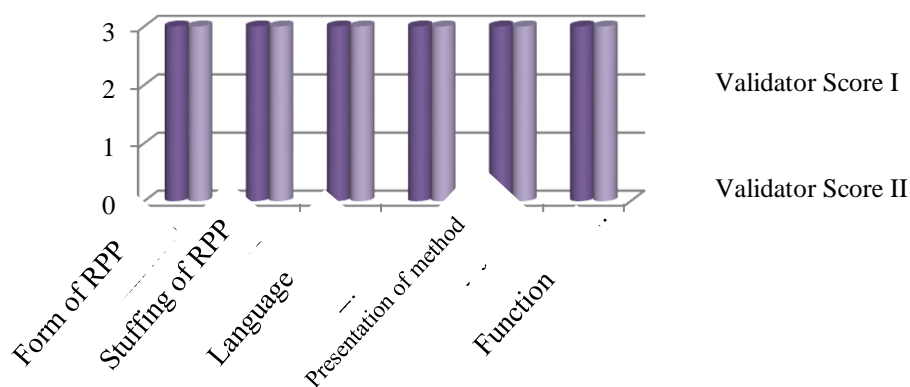


**Figure 1.** Percentage of EduPlasa media validation results

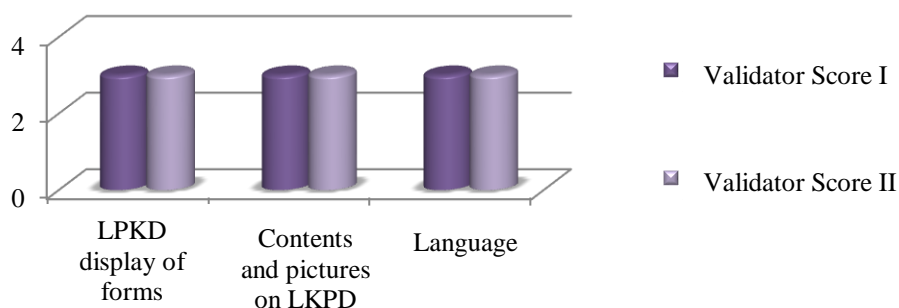


**Figure 2.** Diagram of the percentage of student responses to the use of EduPlasa media

The diagram of the results of the validation of RPP and LKPD by evaluation experts and practitioners is presented as follows:



**Figure 3.** RPP validation percentage diagram



**Figure 4.** Percentage validation diagram of LKPD

## CONCLUSIONS

Based on the data analysis conducted in this study, it can be concluded that EduPlasa's media learning device can be said to be effective because the percentage of the learning device validation results in the form of RPP and LKPD gets a percentage of 75% in the good category so that it is suitable for use. As for the suggestions for researchers, furthermore, it is necessary to develop EduPlasa media learning devices on other topics so that students understand the concept well. When the weakness of understanding the concept has been detected, it needs to be developed better interactive media menus so that they are more complete and interesting and provided a more detailed guide to the use of interactive media because each user does not necessarily understand programming languages and needs to add training questions to sharpen the ability of students to be unlimited is only material in the form of animation and video as well as interactive media for other material.

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## References

- Adi, A.P. (2014). Pengembangan Perangkat Pembelajaran Matematika Dengan Pendekatan Scientific Berbantuan Geogebra Dalam Upaya Meningkatkan Keterampilan Komunikasi Dan Aktivitas Belajar Matematika Siswa Kelas VIII SMP. e-Journal Program Pascasarjana Universitas Pendidikan Ganesha.
- Arikunto, S. (2010). Dasar-dasar Evaluasi Pendidikan (Edisi Revisi). Jakarta: Bumi Aksara.
- Aulia, R.A. (2017). Pengembangan Perangkat Pembelajaran Berbasis Pendekatan Realistik Untuk Meningkatkan Kemampuan Pemecahan Masalah Matematis Siswa SMPN 3 Langsa. Jurnal MAJU

- Candra, & Andista, Y. (2015). Pengembangan Perangkat Pembelajaran Fisika Berbasis Sets Untuk Meningkatkan Kemampuan Berpikir Kreatif Siswa. *e-Journal IKIP PGRI Madiun*
- Diani, R. (2015). Pengembangan Perangkat Pembelajaran Fisika Berbasis Pendidikan Karakter Dengan Model Problem Based Instruction. *Jurnal Ilmiah Pendidikan Fisika Al-BiRuNi*.
- Gunada, W. (2015). Pengembangan Perangkat Pembelajaran Fisika Berbasis Masalah Untuk Meningkatkan Hasil Belajar dan Sikap Ilmiah Mahasiswa. *Jurnal Pendidikan Fisika dan Teknologi*.
- Jaya. (2014). Pengembangan Perangkat Pembelajaran Biologi Bermuatan Pendidikan Karakter Dengan Setting Guided Inquiry Untuk Meningkatkan Karakter Dan Hasil Belajar Siswa SMP. *e-Journal Program Pascasarjana Universitas Pendidikan Ganesha*
- Kurniawan, D. (2017). Pengembangan Perangkat Pembelajaran Dengan Media Screencastomatic Mata Kuliah Kalkulus 2 Menggunakan Model 4-D Thiagarajan. *Jurnal Siliwangi*.
- Munthe, B. (2009). *Desain Pembelajaran*. Yogyakarta: Pustaka Insan Madani.
- Sanjaya, W. (2010). *Kurikulum dan Pembelajaran: Teori dan Praktik Pengembangan Kurikulum Tingkat Satuan Pendidikan (KTSP)*. (Cetakan ketiga). Jakarta: Penerbit Kencana.
- Saputra, H.T. (2018). Pengembangan Perangkat Pembelajaran Matematika Berorientasi Model Pembelajaran Berbasis Masalah (Pbm) Untuk Meningkatkan Kemampuan Berpikir Kritis Siswa SMA Se-Kuala Nagan Raya Aceh. *Jurnal Genta Mulia*.
- Siregar, A. (2016). Pembelajaran Pengantar Fisika Kuantum Dengan Memanfaatkan Media PhET Simulation Dan LKM Melalui Pendekatan Saintifik: Dampak Pada Minat Dan Penguasaan Konsep Mahasiswa. *Jurnal Ilmiah Pendidikan Fisika Al-BiRuNi*.
- Sudijono, A. (2010). *Pengantar Statistik Pendidikan*. Jakarta: Rajawali Press
- Sumiadi, R. (2016). Pengembangan Perangkat Pembelajaran Berbasis Pendekatan Saintifik Model Guided Discovery Dan Efektivitasnya Terhadap Penguasaan Konsep Biologi Siswa Sma Negeri 1 Bayan. *Jurnal Penelitian Pendidikan IPA Universitas Mataram*
- Suprpti, E. (2016). Pengembangan Perangkat Pembelajaran Matematika Model Kooperatif Tipe Stad Dengan Media Powerpoint Ispring Pada Materi Jajargenjang, Layang-Layang, Dan Trapesium Di Kelas VII SMP. *Journal of Mathematics Education, Science and Technology*.