UPADESHA: Journal of Education Research and Learning Innovation
Volume 1, Number 1, 2025 pp. 88-97
Open Access: https://e-journal.samsarainstitute.com/ijel/index

DEVELOPMENT OF GEO NATURAL RESOURCE-APP LEARNING MEDIA IN GEOGRAPHY SUBJECT IN THE 21ST CENTURY

Oleh:
Slamet Suyadi[1], Dwiasa Sambhawa Dharma[2]
[1]Sekolah Tinggi Agama Hindu Shantika Dharma Malang
[2]Sekolah Tinggi Agama Hindu Negeri Jawa Dwipa Klaten
[1]Email:suyadislamet897@gmail.com

ARTICLE INFO

Article History:
Naskah Masuk : 7 Maret 2025
Naskah Direvisi : 20 Maret 2025
Naskah Disetujui : 27 Maret 2025
Tersedia Online : 30 Maret 2025

Keywords:
Geography, Learning Media, Mobile Learning, Geography Education

Kata Kunci:
Geografi, Media Pembelajaran, Mobile Learning, Pendidikan Geografi

A B S T R ACT

Learning media is developing rapidly along with technological developments. The purpose of this study is to develop a mobile learning application called GeoNatural Resource-App based on desktop as a learning medium in geography subjects. The development of GeoNaturalResource-App media follows the steps of ADDIE's development, which are as follows: (1) Analyze: analyze performance, student learning needs, and curriculum. (2) Design: the preparation of the content and display of the media is arranged by creating a storyboard. (3) Development: developing designs into prototypes and validation from material experts and media experts. (4) Implementation: applying valid media to teachers and students to determine the feasibility and effectiveness of the media. (5) Evaluation: analyze the results of comments and suggestions from validators and test subjects. The results of the study show that the percentage of validation carried out by material expert validators is 88.33% and can be said to be feasible. The percentage of validation by media expert validators is 91.76% and can be said to be very feasible. The average percentage of all validators is 90.04% and can be said to be very suitable for use as a learning medium.

A B S T R A K

Media pembelajaran menjadi berkembang pesat seiring dengan peningkatan teknologi. Tujuan dari penelitian ini adalah untuk mengembangkan aplikasi pembelajaran mobile bernama GeoNatural Resource-App berbasis desktop sebagai media pembelajaran mata pelajaran geografi. Pengembangan media GeoNaturalResource-App mengikuti langkah-langkah pengembangan ADDIE, yaitu sebagai berikut: (1) Analyze: menganalisis kinerja, kebutuhan belajar siswa, dan kurikulum. (2) Desain: penyusunan konten dan tampilan media diatur dengan membuat storyboard. (3) Pengembangan: mengembangkan desain menjadi prototipe dan validasi dari ahli material dan ahli media. (4) Pelaksanaan: menerapkan media yang valid kepada guru dan siswa untuk menentukan kelayakan dan efektivitas media. (5) Evaluasi: menganalisis hasil komentar dan saran dari validator dan subjek uji. Hasil penelitian menunjukkan bahwa persentase validasi yang dilakukan oleh validator ahli material adalah 88,33% dan dapat dikatakan layak. Persentase validasi oleh

validator ahli media adalah 91,76% dan bisa dikatakan sangat layak. Persentase rata-rata dari semua validator adalah 90,04% dan bisa dikatakan sangat cocok untuk digunakan sebagai media pembelajaran.

I. INTRODUCTION

Learning activities are routines carried out by teachers in the classroom. The learning activities carried out by teachers in the classroom are very closely related to the use of learning media used as support. Fun learning activities in the classroom depend on how the teacher delivers the material and interactive media that is in accordance with current developments. In research conducted by Herijanto (2012) stated that learning is more meaningful if students experience it directly. The more concrete a student learns the learning material, the more meaningful the learning results he obtains.

The technology-based learning media used by teachers is the use of power points when explaining material in front of the class. In a study conducted by Nurseto (2011) stated that power point is one of the software that is specifically designed to be able to display multimedia programs attractively, easy to make, easy to use and relatively cheap, because it does not require raw materials other than tools for data storage.

The use of learning media in the learning process is one of the efforts to create more meaningful and quality learning. Latuheru (1988: 15). One of the technology-based learning media is to develop game-based applications. In a study conducted by Novaliendry (2013) stated that the application of educational games began from the very rapid development of video games and made it an effective media that was interactive and widely developed in industry. In research conducted by Listyorini (2013) stated that mobile learning brings the benefits of the availability of teaching materials that can be accessed at any time and the visualization of interesting materials.

The majority of educational game learning media use smartphones and desktops. In research conducted by Silvia et al. (2014) stated that android provides all complete tools and frameworks for application development on a mobile device. So that with these advantages, android is easy to develop as an application-based learning medium. GeoNaturalResource-App is a supporting application in the learning process, especially in geography subjects. The geography material that will be included is about the distribution of natural resources in Indonesia which is taught in high school grade XI semester two. One of the reasons why learning materials about the distribution of natural resources in Indonesia are used in this application is that the material is always evolving in accordance with the natural conditions in Indonesia. So that students' knowledge in understanding the material will be easier because it is directly related to daily life.

Based on research conducted by Astuti et al. (2017) stated that to overcome the problem of student abstraction, learning media that can explain the concept is needed, namely with desktop-based mobile learning learning media. The problem that teachers often face in learning is the limited use and utilization of media and only racing on package books and practice questions contained in the books.

II. METHOD

The learning media development model in the research uses the ADDIE development model. The term ADDIE stands for *Analyze, design, develop, implement, and Evaluation*. The use of the ADDIE development model because this model is efficient and also simple in the development of learning media products, at each stage there are revisions so that product results are obtained in accordance with the development goals. This research is a type of research and development (R&D). The research location is located at Tri Murti 01 Pakisaji High School, Malang Regency.

III. RESULT AND DISCUSSION

3.1 Use of Geo Natural Resources-App Media for Students

The implementation carried out in the application of the GeonaturalResource-App product to the trial was a field test for all students of class XI IPS at SMA Trimurti 01 Pakisaji, Malang Regency totaling 20 students. The application product is in the form of an .exe file (executable file) that can be installed in the desktop. The use of this media from the stage of media use has the following steps and product appearance:

a. App home view

Figure 1. Application Opening

After opening the app before logging in, users must enter their name to mark their profile on the high score menu after taking the quiz.

b. App main menu

Figure 2. App Main Menu

After writing the name and clicking submit, several menus of options will be presented on the application. There are six main menus, namely material, *map, quis, high score, about, and other.*

c. In-app material display

Figure 3. Material Menu Display

Figure 4. Material Menu Contents Display

There are three learning materials, each of which is packaged with an attractive icon design, choose one of the material icons to see the content of the material in it.

d. Indonesia map view app

Figure 5. Map view of Indonesia

Figure 6. Province Display on Map

The view of the map of Indonesia consisting of 34 provinces in Indonesia, each part of the region or icon can be clicked. Inside the icon there is a map of the selected province, provincial logos, biological and non-biological natural resources from all 34 provinces in Indonesia.

e. Quiz display on the app

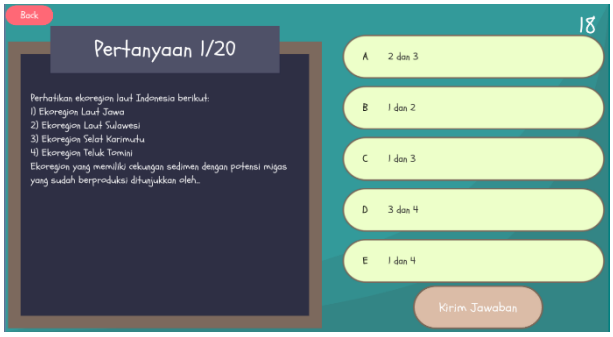

Figure 7. Quiz Question Display

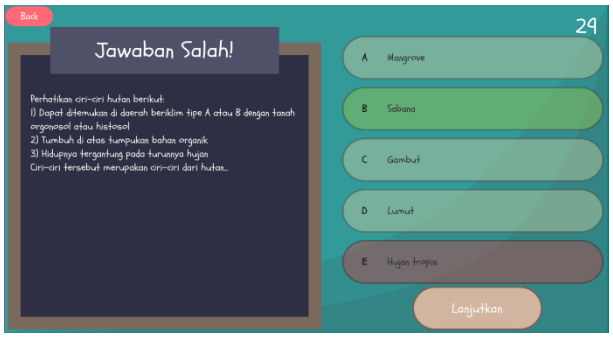

Figure 8. Incorrect Answer Quiz Display

In this menu, quiz questions totaling 20 questions are presented that vary according to the material with a time of 30 seconds, the wrong answer will be green on the answer choice pencil and red for the wrong one. Every time you repeat or start the quiz again, the order of the questions and the location of the answers will be random, and so on.

f. Display of the order of grades on high *scores*

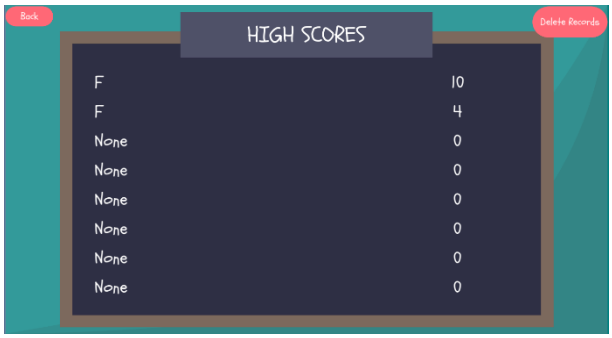

Figure 9. High Score *Display*

In this menu, there is a score for each profile that took the quiz in the previous menu. There is also a delete record command which means to delete all the values obtained and start from scratch.

g. About menu display

Figure 10. About Menu Display

In the *about menu* , there is the identity of the creator of *the GeoNaturalResource-App* application with a photo, and the contact information of the creator.

h. The other menu display has 5 sub-menus

Figure 11. Other Menu *Display*

In the other menu, there are five more sub-menus in the form of general knowledge quizzes, other teaching materials, geography, ecoregion and references.

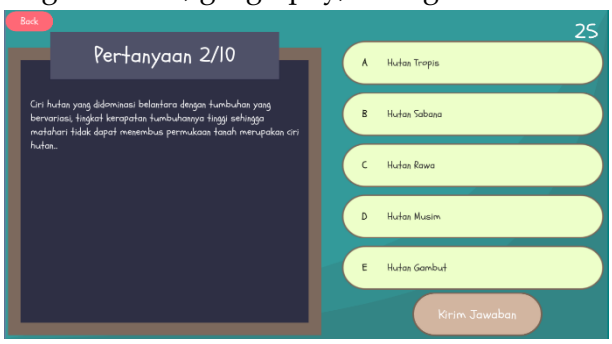

Figure 12. General Knowledge Quiz Display

The general science quiz submenu contains general knowledge about the geography of natural resources to increase students' insights.

Figure 13. Display of the content of other teaching materials

In other teaching materials submenus, there are teaching materials that are packaged in various products and can be directly accessed through the available links.

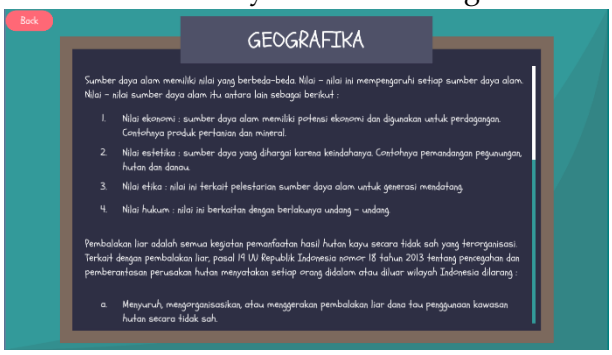

Figure 14. Display of Materials in Geography

The geography submenu contains additional material that is general knowledge to increase insight from users.

Figure 15. Ecoregion Map View

Figure 16. Ecoregion Material Display

In the ecoregion submenu containing 18 points spread throughout Indonesia ranging from the waters of Sumatra to Papua, the number icon on the map can be clicked and contains information about the ecoregion material of the region.

i. Reference display on the app

Figure 17. Reference View

In the reference submenu, there are sources from application makers, some of which can be accessed directly to the internet through existing links.

3.2 Product Review of Geo Natural Resources-App Learning Media

The research model used by the researcher, namely using the ADDIE model, starts from analyze which includes analysis of competencies, materials and student characteristics. The second stage is design by determining the appropriate layout and color for student media. Furthermore, the third step is development, at this stage the researcher makes revisions related to the resulting product based on the assessment carried out by validators, material experts, and media experts. Then, the fourth step is implementation in the form of product trials by conducting trials on grade XI social studies students at SMA Trimurti 01 Pakisaji, Malang Regency. The last stage is evaluation. The evaluation used is an evaluation carried out in the four stages above. In this study, the researcher only used the evaluation stage as the development stage, namely in the form of product revision.

Based on the results of the research derived from the validity test conducted by validators, material experts, and media experts regarding the development of this desktop-based interactive learning media application, it can be concluded that this media is valid to be used as a geography learning medium in the material on the distribution of natural resources in Indonesia in class XI IPS at SMA Trimurti 01 Pakisaji, Malang Regency.

Based on the results of material validation, a percentage of 88.33% was obtained with valid information which means it is suitable for use as a learning medium. This is in line with Wahono (2006) stating that the material must contain the learning objectives of basic competencies, the accuracy of the use of learning strategies, the clarity of descriptions, discussions, and evaluation tools. The results of media validation received a percentage of 91.76% with very valid information that can be interpreted as very feasible to use. This is in line with what was stated by Daryanto in Wibisono et al. (2010), that the media is a tool that can help the teaching and learning process which functions to clarify the meaning of the message conveyed so that the teaching objectives can be conveyed better and more appropriately.

The average result of the overall feasibility test obtained was 90.04% which means that this learning application is suitable for use as a learning medium. It can be concluded that the development of desktop-based learning media, namely GeoNaturalResource-App as a geography learning medium for class XI social studies at SMA Trimurti 01 Pakisaji, Malang Regency, is valid for use. This is in agreement with research conducted by Wibisono (2010) that media in the educational technology area is a learning resource in the form of a combination of materials and equipment.

This desktop-based learning media application, GeoNaturalResource-App, is practically used anywhere and can be learned both at school and outside of school. The material presented in this learning application is also summarized more simply and can add to students' insight in learning about the distribution of natural resources in Indonesia. So that

this learning application can support students so that they are not saturated with the learning media that they usually do every day. This is in line with research conducted by Wibisono (2010) that students need question and answer media to help memory and train students intelligence from the subject matter that has been delivered.

IV. CONCLUSION

The Geonatural Resource-App application is supported by school regulations, where students are required to bring laptops during learning, can be installed on computers and can be disseminated through google drives. The App is easy to take around and can be used at any time using your device. The material presented is material on the distribution of natural resources in Indonesia accompanied by general knowledge and other references for support. This application can be used offline in accessing and using media. Students and teachers can use this media for learning in geography classes. The validation results obtained ae also quite large, namely 91.76% with very valid information and very suitable for use. The suggestion from the researcher is that this product should be disseminated through the Forum Group Discussion which invites in forum geography teachers and through the download link on the google drive that has been provided by developer.

REFERENCES

Arsyad, A. 2013. *Media Pembelajaran*. Jakarta: PT. Raja Grafindo Persada

Astuti, Imin Agustina Dwi Astuti., Sumarni, Ria Asep., Saraswati, Dandan Luhur. 2017. Pengembangan Media Pembelajaran Fisika Mobile Learning berbasis Android. Jurnal Penelitian & Pengembangan Pendidikan Fisika 3(1), 57-62. Scholar.google.co.id

Azhar Arsyad. (2011). *Media Pembelajaran*. Jakarta: Rajawali Pers

Daryanto.2015 Media Pembelajaran. Bandung: PT. Sarana Tutorial Nurani Sejahtera.

Darmawan, Deni, 2011, inovasi pendidikan: pendekatan praktik teknologi Multimedia dan pembelajaran online. Bandung: PT Remaja Rosdakarya Offset.

Falahudin, Iwan. 2014. Pemanfaatan Media dalam Pembelajaran. Jurnal Lingkar Widyaiswara Balai Diklat Keagamaan. 1(4), 104 – 117. Dari https://juliwi.com/published/E0104/Paper0104_104-117.pdf.

Hanim, Fitria., Sumarmi., Amirudin, Ach. 2016. Pengaruh Penggunaan Multimedia Pembelajaran Interaktif Penginderaan Jauh Terhadap Hasil Belajar Geografi. Jurnal Pendidikan Geografi- Pascasarjana Universitas Negeri Malang. 1(4), 752 – 757. Dari http://journal.um.ac.id/index.php/jptpp/article/view/6246.

Herijanto, Budi. 2012. Pengembangan Cd Interaktif Pembelajaran Ips Materi Bencana Alam. *Journal of Educational Social Studies* (1)1. https://journal.unnes.ac.id/sju/index.php/jess.

Husain, Chaidar. 2014. Pemanfaatan Teknologi Informasi Dan Komunikasi Dalam Pembelajaran Di SMA Muhammadiyah Tarakan. Jurnal Kebijakan dan Pengembangan Pendidikan (2)2 184-192. ejournal.umm.ac.id.

Kementrian Pendidikan dan Kebudayaan. 2013. *Kurikulum 2013 Mata Pelajaran Geografi SMA/MA*. Jakarta: Kementrian Pendidikan dan Kebudayaan.

Latuheru, John D. 1988. Media Pembelajaran dalam Proses Belajar-Mengajar Masa Kini. Jakarta: Depdikbud.

Listyorini, Tri., Widodo, Anteng. 2013. Perancangan Mobile Learning Mata Kuliah Sistem Operasi Berbasis Android. Jurnal SIMETRIS (3)1. Jurnal.umk.ac.id

Muhson, Ali.2010 Pengembangan Media Pembelajaran Berbasis Teknologi Informasi. Jurnal Pendidikan Akuntansi Indonesia. 8(2), 1 - 10. Dari. https;//journal.uny.ac.id/index.php/jpakun/article/download/949/759.

Nana Sudjana & Ahmad Riva'i. (2002). Media Pengajaran. Bandung: PT Sinar Baru Algesindo

Novaliendry, Dony. 2013. Aplikasi Game Geografi Berbasis Multimedia Interaktif (Studi Kasus Siswa Kelas IX SMPN 1 Rao). Jurnal Teknologi Informasi & Pendidikan (6)2. https://s3.amazonaws.com/

Nurseto, Tejo. 2011. Membuat Media Pembelajaran Yang Menarik. Jurnal Ekonomi & Pendidikan (8)1 19-35.https://journal.uny.ac.id/index.php/jep/article/viewFile/706/570.

Prasetya, S., P. 2015. Media Pembelajaran Geografi. Yogyakarta: Ombak

Purbasari, Julia, R., Shohibul & Yunus. 2013. Pengembangan Aplikasi Android Sebagai Media Pembelajaran Matematika Pada Materi Dimensi Tiga Untuk Siswa SMA Kelas X. Artikel Ilmiah FMIPA UM. Mei 2013.

Rohman, Muhammad dan Amri, Sofan. 2013. Strategi dan Desain Pengembangan Sistem Pembelajaran. Jakarta: Prestasi Pustaka.

Ryan and Exridores.2015. *Penerapan Algoritma Fisher-Yates Pada Aplikasi The Lost Insect Untuk Pengenalan Jenis Serangga Berbasis Unity. Palembang*

Silvia, Ai Fitri., Haritman, Erik., Muladi, Huda. 2014. Rancang Bangun Akses Kontrol Pintu Gerbang Berbasis Arduino Dan Android. ELECTRANS (13)1 1-10.https://ejournal.upi.edu/index.php/electrans/article/viewFile/1888/1276.

Uji Siti Barokah. (2014). "Pengembangan Komik Digital Berbasis Nilai Karakter Sebagai Media Pembelajaran Akuntansi Pada Kompetensi Dasar Menyusun Laporan Keuangan Perusahaan Jasa Untuk Sma Kelas XI". Skripsi. Yogyakarta: UNY.

William Stalling. (2012). Operating System: Internals and Design Principles, Seventh Edition. USA: Prentice Hall

Yazdi, Mohammad. 2012. E-Learning Sebagai Media Pembelajaran Interaktif Berbasis Teknologi Informasi. Jurnal Ilmiah Foristek (2)1 143-152. http://jurnal.untad.ac.id/jurnal/index.php/FORISTEK/article/viewFile/665/584