

**DEVELOPING 3D AURORA PRESENTATION (3D-AP) LEARNING MEDIA ON
'NATURAL DISASTER MITIGATION AND ADAPTATION' TO ENHANCE
THE LEARNING EFFECTIVITY FOR TENTH GRADE STUDENTS AT MAN
PASURUAN**

THESIS

By:

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SOCIAL SCIENCE EDUCATION DEPARTMENT

FACULTY OF EDUCATION AND TEACHING TRAINING

MAULANA MALIK IBRAHIM STATE ISLAMIC UNIVERSITY MALANG

JULY, 2017

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THESIS

In Partial Fullfulilment of the Requirment for The Degree of
Sarjana Pendidikan (S.Pd) at Faculty of Education and Teaching Training
Maulana Malik Ibrahim State Islamic University of Malang

By:

ANA FIRDIANSYAH

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SOCIAL SCIENCE EDUCATION DEPARTMENT

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THESIS

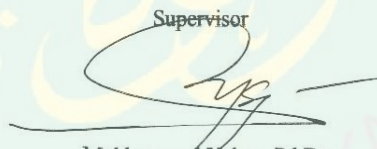
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THE LEARNING EFFECTIVITY FOR TENTH GRADE STUDENTS AT MAN
PASURUAN

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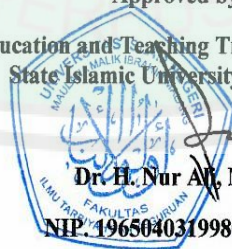
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DEDICATION

Thanks to Allah who gives me mercy and blessing to finish my thesis. Shalawat and salam also always be given to prophet Muhammad SAW who deliver us from jahiliyyah period to lightness Addinul Islam.

This Thesis I dedicate to my beloved people whom I loved. I dedicate for my beloved parents, my mom Ms.Farida and my dad Mr.Bangun Sunaryo (Alm) without they I cannot do like now. Thank you for always give me praying, loving and supporting to finish up this thesis.

I dedicate for my beloved sister Fitria Putri Rahmawati who always give me support and loving.

I dedicate for my beloved friends Anggi, Tao, Ningrum, Ella, Nur, Lail who always give me support for do the thesis.

I dedicate to my second family for my classmate in ICP P.IPS 2013, because family is us, they are my everything in the world and I greteful together with us until now.

MOTTO

Don't stop when you're tired,

Don't stop until you're proud,

Stop when you're done.



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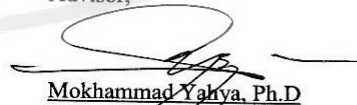
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Malang, May 23th 2017

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PREFACE

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

All praise to be Allah he all mighty, who has giving us mercies and blessing until I can finish this thesis on the title “*Developing 3D Aurora Presentation Learning Media On ‘Natural Disaster Mitigation and Adaptation’ To Enhance The Learning Effectivity For Tenth Grade Student At MAN Pasuruan*” on time. My Sholawat and Salam always be presented to our prophet Muhammad SAW, the last messenger of Allah who has save the human’s live from destruction to safety Islam is the true religion.

This thesis to fulfill the academic requirement for getting bachelor or undergraduate degree.

The author never forget to thanks my beloved parents that always give me motivation to study hard until getting the bright future and some person in supporting and guiding me to finish this research proposal. Those are:

1. Prof. Dr. H. Mudjia Rahardjo, M.Si as Rector of Maulana Malik Ibrahim State Islamic University Malang.
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3. Dr. H. Abdul Basith, M.Si, as the Chief of Social Science Education Program.

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The last, author believe that there are so many mistake this thesis, so that I never forget to ask some suggestion for the mistake in this thesis. May Allah give us his mercies and blessing.

Malang, May 23th 2017

Ana Firdiansyah

ARAB AND LATIN transliteration

The writing of Arabic - Latin transliteration in this thesis using transliteration guidelines based on the decision by Minister of Religious Affairs and the Minister of Education and Culture of Republic Indonesia No. 158 of 1987 and No. 0543 b/U/1987 which can be broadly describe as follows:

A. Alphabe

ا	=	A	ز	=	Z	ق	=	Q
ب	=	B	س	=	S	ك	=	K
ت	=	T	ش	=	Sy	ل	=	L
ث	=	Ts	ص	=	Sh	م	=	M
ج	=	J	ض	=	Dl	ن	=	N
ح	=	H	ط	=	Th	و	=	W
خ	=	Kh	ظ	=	Zh	ه	=	H
د	=	D	ع	=	'	ء	=	,
ذ	=	Dz	غ	=	Gh	ي	=	Y
ر	=	R	ف	=	F			

B. Long Vocal

Vocal (a) long	=	â
Vocal (i) long	=	î
Vocal (u) long	=	û

C. Diphthongs Vocal

أُ	=	Aw
أَيُّ	=	Ay
أُو	=	Û
إِي	=	Î

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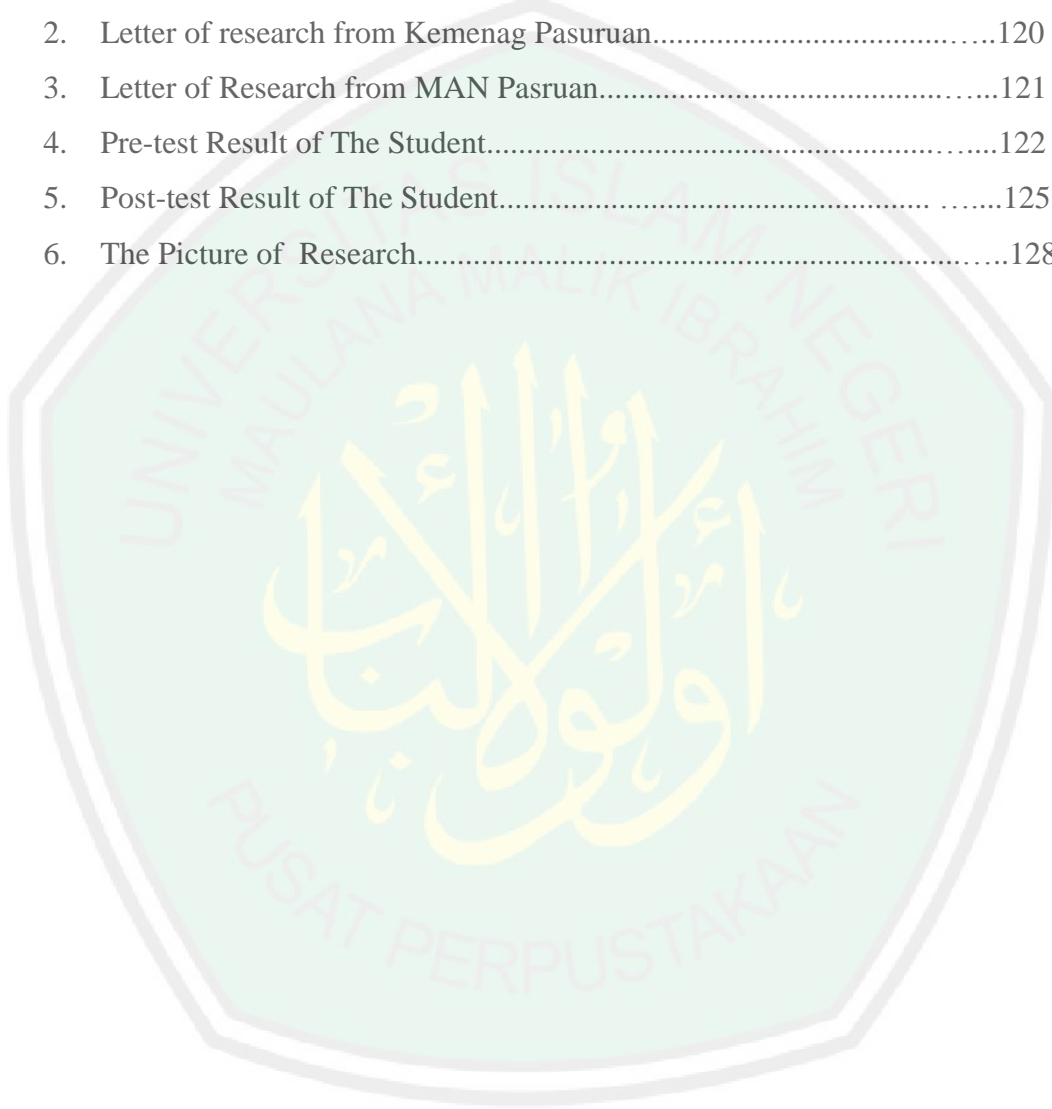


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ABSTRAK

Firdiansyah, Ana. 2017. *Pengembangan Media Pembelajaran 3D Aurora Presentation Pada 'Mitigasi dan Adaptasi Bencana Alam' Untuk Meningkatkan Effektivitas Pembelajaran Siswa Kelas Sepuluh di MAN Pasuruan*. Skripsi, Jurusan Ilmu Pengetahuan Sosial, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam Negeri Maulana Malik Ibrahim Malang. Pembimbing: Mokhammad Yahya, MA, P.hD.

Key Words : *Media Pembelajaran 3D Aurora Presentation, Mitigasi dan Adaptasi Bencana Alam, Effektivitas Pembelajaran*.

Dewasa ini didalam proses pembelajaran media yang digunakan sudah sangat bervariasi, seiring dengan kemajuan ilmu pengetahuan dan teknologi salah satunya adalah dengan menggunakan media interaktif berbasis program komputer. Diharapkan dengan menggunakan media pembelajaran interaktif berbasis program Komputer mampu mewujudkan pembelajaran yang bersifat inovatif, dan interaktif maka dibutuhkan pengembangan media pembelajaran interaktif berbasis *3D Aurora Presentation*. Penggunaan media pembelajaran *3D Aurora Presentation* mampu meningkatkan effektivitas pembelajaran khususnya pada materi mitigasi dan adaptasi bencana alam.

Penelitian ini menggunakan jenis penelitian pengembangan yaitu *Research and Development* (R &D). Dengan rancangan penelitian yang diadaptasi dari model pengembangan Dick and Carrey. Berdasarkan prosedur tersebut terdapat lima tahapan penelitian yaitu 1) analisis pembelajaran, 2) identifikasi tujuan pembelajaran, 3) tahap desain produk, 4) validasi dan evaluasi, 5) Evaluasi formatif. Penelitian ini dilaksanakan di MAN Pasuruan, kelas sepuluh IPS dengan siswa yang berjumlah 34.

Berdasarkan hasil validasi ahli mendapatkan penilaian oleh validasi ahli materi pada siklus pertama menunjukkan hasil "Cukup" dan masih memerlukan revisi produk dengan prosentase 70%, sedangkan untuk validasi ahli design pada siklus pertama memperoleh hasil "Kurang Valid" dan memerlukan revisi produk dengan prosentase sebesar 55,38%. Kemudian pada validasi ahli materi pada siklus kedua memperoleh hasil "Valid" dengan perolehan skor 84% dan tidak memerlukan revisi produk, sedangkan untuk validasi ahli design menunjukkan hasil "Valid" dengan perolehan skor 86,5% yang berarti media pembelajaran *3D Aurora Presentation* valid dan tidak memerlukan revisi produk.

Hasil penelitian mengungkapkan bahwa media pembelajaran *3D Aurora Presentation* dapat meningkatkan effektivitas pembelajaran geografi pada materi Mitigasi dan Adaptasi Bencana Alam untuk siswa kelas X MAN Pasuruan, dengan

memperoleh nilai 84,71 pada uji coba produk dengan menggunakan uji t dengan tingkat kemaknaan 0,05 maka diperoleh hasil $t_{hitung} \geq t_{tabel}$ yaitu $7,59 \geq 1,99656$ artinya H_a diterima dan H_o ditolak. Hal ini juga ditunjukkan dengan perolehan hasil rata-rata siswa sebelum menggunakan media pembelajaran *3D Aurora Presentation* yaitu sebesar 69,44 sedangkan setelah menggunakan media pembelajaran *3D Aurora Presentation* hasil rata-rata yang diperoleh siswa meningkat yaitu sebesar 84,71. Hal ini menunjukkan bahwa dengan menggunakan media pembelajaran *3D Aurora Presentation* dapat meningkatkan efektivitas pembelajaran geografi.



ABSTRACT

Firdiansyah, Ana. 2017. *Developing 3D Aurora Presentation Learning media On 'Natural Disaster Mitigation and Adaptation To Enhance The Learning Effectivity For Tenth Grade Students At MAN Pasuruan*. Skripsi, Social Science Education Department, Faculty of Education and Teacher Training, Maulana Malik Ibrahim Malang State Islamic University, Malang. Advisor: Mokhammad Yahya,.MA,.P.hD.

Key Words : *3D Aurora Presentation Learning Media, Natural Disaster Mitigation and Adaptation, Learning Effectivity*.

Nowadays in the teaching and learning process the utilization of learning media is a very variety in a row of science and technology is evolving very rapidly one of is the utilization of interactive learning media based on computer program. Hopefully with the utilization of interactive learning media based on computer program can realized the learning that is both of innovative and interactive so need to developing learning media based on *3D Aurora Presentation*. learning media based on *3D Aurora Presentation* able to enhance the learning effectivity on natural disaster mitigation and adaptation topic.

This research uses development research namely Research and Development (R&D). With using research design is adapted from development model of Dick and Carrey. Based on the development procedure there are fifth stage research: 1) learning analyze, 2) identify learning objective, 3) design product stage, 4) the validation stage and evaluate , 5) summative evaluation stage. This research was carried out in MAN Pasuruan, class X IPS with student total 34.

Based on the results of validation expert obtained that assessment by validation material expert and validation design media expert. In the first cycle, the result of validation material qualifications shows “Enough” and need to revision the product with a percentage of 70%, whereas the result validation design expert shows qualification “Less Valid” and need to revision product with percentage 55,38%. Then in the second cycle, the result of validation material qualification “Valid” with obtained score 84% means that the *3D Aurora Presentation* learning media not need to revision product, whereas the result validation design expert shows qualification “Valid” with obtained score 86,5% which means that the *3D Aurora Presentation* learning media not need to revision product. Based on the result research shows that *3D Aurora Presentation* learning media able to enhance the learning effectivity on natural disaster mitigation and adaptation for tenth grade students at MAN Pasuruan, with obtained the score 84,71 on the result of trial with the calculation using t-test with a significant level of 0,05 retrieved results $t_{hitung} \geq t_{tabel}$ is $7,59 \geq 1,99656$ which

means that H_a accepted and H_0 rejected. This also shows the result test before using *3D Aurora Presentation* learning media average student result obtained score 69,44 while after using *3D Aurora Presentation* learning media the student result obtained score 84,71. Which means that *3D Aurora Presentation* learning media able to enhance the learning effectivity.



ملخص

فيرديانشة، أنا. 2017. تنمية وسيلة التعلم المجسم عرض أورارا (Aurora Pesentation) في التخفيف و
تكييف مصيبة العالم لارتفاع فعالية التعلم لطلاب الفصل العاشر في المدرسة الثانوية
باسوروان. الدراسة، قسم العلوم الإجتماعية، كلية العلوم التربية و التدريس، جامعة
الإسلامية الحكومية مولانا مالك إبراهيم مالانج. المشرف: محمد يحيا الماجستر.

الكلمات الرئيسية : وسيلة التعلم المجسم عرض أورارا (Aurora Pesentation)، التخفيف و تكييف
مصيبة العالم، التعلم الفعال.

وسائل الإعلام المستخدمة اليوم في العملية التعليمية كانت متنوعة جدا، جنبا إلى جنب مع تقدم
العلم والتكنولوجيا واحدة منها هي باستخدام وسائل الإعلام التفاعلية القائمة على برنامج كمبيوتر. ومن
المتوقع أن باستخدام الوسائل التعليمية على أساس برنامج كمبيوتر تفاعلي قادر على تحقيق التعلم المبتكر
و المتفاعل، لذلك يحتاج إلى تطوير وسائل الإعلام المجسم عرض أورورا. استخدام الوسائل التعليمية
المجسمة عرض أورورا قادرة على ارتفاع فعالية التعلم، وخصوصا في مادة التخفيف و تكييف مصيبة
العالم.

تستخدم هذه الدراسة نوع من البحوث في تطوير البحوث هو البحث والتطوير (R & D). مع
تصميم هذه الدراسة هو استخدام نموذج التنمية لديك وكاري. بهذه الإجراءات، هناك خمسة مراحل
للبحث: (1) تحليل التعلم، (2) تحديد أهداف التعلم، (3) مرحلة تصميم المنتج، (4) والتحقق و التقييم،
(5) التقييم التكويني. وقد أجري البحث في المدرسة العالية الحكومية باسوروان، في الفصل العاشر بعدد
الطلاب 34 نفرا.

بنتائج التحقق من صحة الأهل حصول على تقييم من المواد التحقق من صحة الأهل في الدورة
الأولى يظهر نتائج "كفى" و يحتاج إلى تحسين منتجة بنسبة 70%، أما للتحقق من صحة تصميم الأهل في
الدورة الأولى من الحصول على نتائج "أقل سليمة" ويتطلب تحسين المنتجة بنسبة 55.38%. ثم التحقق
من صحة الأهل المواد في الدورة الثانية الحصول على النتائج "سالمة" باكتساب درجة من 84% ولا يتطلب
تحسين المنتجة، أما التحقق من صحة الأهل في التصميم تظهر النتائج "سالمة" باكتساب درجة 86.5%،
وهو ما يعني أن وسيلة التعلم المجسم عرض أورورا سالمة وصالحة لا تتطلب تحسين المنتجة.

كشفت نتائج الدراسة أن وسيلة التعلم المجسم عرض أورورا يمكن أن تزيد فعالية التعلم الجغرافيا في التخفيف تكييف مصيبة العالم لطلاب الفصل العاشر في المدرسة العالية باسوروان، للحصول على درجة 84.71 على اختبار المنتجة باستخدام اختبارات مع مستوى الأهمية من 0.05، لذلك وجد الحصول عليها $t_{hitung} \geq t_{tabel}$ yaitu $7,59 \geq 1,99656$ H_a هو المقبول و H_0 هو المرفوض. ويتضح ذلك أيضا من الحصول على نتائج الطالب المتوسط قبل استخدام الوسائل التعليمية المجسمة عرض أورورا بدرجة 69.44 وبعد استخدام الوسائل التعليمية المجسمة عرض أورورا زاد النتائج الطلاب بدرجة 84.71. وهذا يدل على أن استخدام الوسائل التعليمية المجسمة عرض أورورا يمكن في تحسين فعالية التعلم الجغرافيا.



CHAPTER I

INTRODUCTION

A. Background

Geography is the study of life on the surface of the earth. Historically it has consisted of two main branches, human geography and physical geography. Human geography focuses on characterizing and explaining the differences between places in the present and throughout time, theorizing and modeling the spatial structure, organization, and control of society, and explaining the meaning and significance of place, space, and landscape¹. Physical geography generally focuses on physical systems at the landscape scale, that is, not at the scale of the globe or below the surface of the earth, which is the realm of geology². Thus, physical geographers study how features in the landscape are formed over time (geomorphology), how fluvial systems develop, and the spatial distribution, movements, and characteristics of flora and fauna.

Permendikbud number 69 years 2013 pointed out that the scope of geography that is taught in the high school is basic introduction to geography, geographical research steps to geosphere phenomenon, the dynamics of earth as a life space, distribution patterns of spatial and lithosphere, atmosphere,

¹ (<http://www.middlebury.edu/academics/geog/about/whatisgeography>, access January 2017)

² (<http://www.middlebury.edu/academics/geog/about/whatisgeography>, access January 2017)

hydrosphere, and antroposphere, natural disaster mitigation and adaptation, distribution of natural resources and human resources, distribution of flora and fauna in Indonesia, distribution of mining in Indonesia, Indonesian geographical condition, demography problems and dynamic, cultural diversity of the nation, local wisdom in the utilization of natural resources, preservation of environment and sustainable development, remote sensing and utilization of maps and geography information system (GIS)³.

By looking at that scope of Geography at Indonesian High Schools it is clearly seen that physical geography is very central to be taught. Teaching physical geography should not be treated similarly with human geography particularly in terms of its learning media. Preliminary research at the research site (MAN Pasuruan) has indicated that geography learning has been learnt through various learning media. Geography teacher at MAN Pasuruan, Dini Islami stated that *“The utilization of learning media for geography subject at MAN Pasuruan is varied such as maps, globe, satellite image, maps of flora fauna dispersal, solar system equipment, LCD, power point, and any other learning equipment’s that has been provided by the school. We have sometimes utilized mass media like newspaper and magazine as material for discussion in the classroom”*⁴.

³ Permendikbud Nomor 69 Tahun 2013 tentang Kerangka Dasar Dan Struktur Kurikulum Sekolah Menengah Atas/Madrasah Aliyah Kompetensi Dasar, page.8

⁴ Interview with Dini Islami, Pasuruan on Saturday. 9 Nopember 2016

The utilization of media in the learning process is important. Because media is an equipment that have function to convey the learning message⁵. According to Ibrahim learning media is any medium that is able to convey the message (learning material) so that it can enhance the students' attentions, interests, thoughts, and experiences and it finally will help to search the certain learning goals. Learning media such as picture, main map, film, video, computer, and others are some examples of equipment's that have function to convey the learning material. Therefore, the learning media that are arranged with good creativity will help students to easily study and understand in a better way so that is will eventually enhance student ability to rich their learning objectives⁶.

Nowadays the utilization of learning media in the schools is influenced by the development of technology. LCD, OHP, CD, DVD, video, computer, and internet or computer software product are examples of learning media that had been used in the school. In this thesis I would like to develop learning media by using 3D Aurora Presentation (3D-AP)⁷. 3D-AP is a computer software for making 3D (dimension) slide presentation that consist of picture, text, video, and 3D slide presentation in 3D (dimension)⁸. This development

⁵ Hujair Snaky, *Media Pembelajaran* (Yogyakarta : Safrina Insania Press), page.3

⁶ Ibid, page.3

⁷ In this thesis, the term 3D Aurora Presentation will be shortened as 3D-AP only

⁸ Hernawati Kuswari 2009, *Modul Membuat Slide Presentasi Dengan Aurora 3D Presentation (Online)*(<http://staff.uny.ac.id/sites/default/files/pengabdian/kuswari-hernawati-ssi-mkom/modul3DAurora-media-Presentation.pdf> accessed 22 April 2016)

of 3D-AP is chosen because this 3D-AP is not utilized yet in the research site and it is hope will improve the existing learning media as well. It is also hoped that 3D-AP in geography learning can make the learning process more interactive between teacher and students.

The topic of natural disaster and mitigation is a new topic in the geography subject. This topic consists of materials that enable students having experience and ability on mitigation disaster. This is because geography learning put more emphasize in human being aspects within spatial context⁹. At MAN Pasuruan for natural disaster mitigation and adaptation topic, teacher uses power point presentation (PPT) and LCD equipment to present her material, teacher used a conventional media meanwhile the students with learning also less interested, beside the lack of supporting picture for sub material this happened made students as learner just take and not interest with learning process. Most of student more interesting with learning process which uses many picture, video and some of instructional text Through this research and development on 3D-AP it is hoped that it is going to make students increase their interests to study with this 3D-AP and its slide presentation in which equipped with (embedded) navigation attract students to deepen their comprehension.

⁹ *Permendikbud Nomor 69 Tahun 2013 tentang Kerangka dasar dan struktur Kurikulum Sekolah Menengah Atas / Madrasah Aliyah, pada Kompetensi dasar geografi kelas X . page.173*

Based on the factual condition of geography learning at MAN Pasuruan, I decided to develop 3D-AP as geography learning media on the topic “Natural Disaster Mitigation and Adaptation”. By using 3D-AP hopefully it can help teacher and student learn interactively and easily to study in the class in enhancing the effectivity of learning geography at MAN Pasuruan. The Advantages of 3D-AP is very useful to create vibrant and vivid looking presentations. With Presentation 3D is not a difficult task nowadays with the help of varied technology that has come up like Photoshop and Flash which in turn consists of a wide variety of tools and features that can intuitively display any kind of content. In professional situations and requirements PowerPoint presentations are very useful as they allow condensing of complex information and details in easy to understand format that can be accepted and comprehended by all kinds of audiences. This is the reason why imagery and interactive graphics are used for depicting and presenting concepts as pictures can explain more vividly and interestingly.

Amongst various tools that are used for this purpose is Presentation 3D that combines powerful techniques for illustrative purposes. Based on this benefit therefore, I selected 3D-AP to be researched and developed as my undergraduate thesis entitled ‘Developing *3D-AP* Learning Media on *‘Natural Disaster Mitigation and Adaptation’* to Enhance the Learning Effectivity for Tenth Grade Students at MAN Pasuruan’.

B. Research Questions

Based on the introduction above the main objective of this study is to develop the learning media using 3D-AP on the topic Natural Disaster Mitigation and Adaptation. The more specific research question of this study can be described as follow:

1. What are the characteristics of 3D-AP Learning Media on *Natural Disaster Mitigation and Adaptation* in enhance learning effectivity for tenth grade students at MAN Pasuruan?
2. How is the process of 3D-AP Learning Media on *Natural Disaster Mitigation and Adaptation* in enhance learning effectivity for tenth grade students at MAN Pasuruan?
3. How is the effectivity of 3D-AP Learning Media on *Natural Disaster Mitigation and Adaptation* to enhance learning effectivity for tenth grade students at MAN Pasuruan?

C. Objectives of the Study

The main objective of the study is to develop the learning media using 3D-AP on the topic ‘*Natural Disaster Mitigation and Adaptation*’. The more specific objectives of the study can be described as follow:

1. To explain the characteristics of 3D-AP Learning Media on *Natural Disaster Mitigation and Adaptation* to enhance learning effectivity for tenth grade students at MAN Pasuruan.

2. To explain the process of 3DAP Learning Media on *Natural Disaster Mitigation and Adaptation* to enhance learning effectivity for tenth grade students at MAN Pasuruan.
3. To know the effectivity of 3D-AP Learning Media on *Natural Disaster Mitigation and Adaptation* to enhance learning effectivity for tenth grade students at MAN Pasuruan.

D. Significant of the Study

In this research, I explain about the significant of study in this research. The first is the benefit for the teachers and the students will be used this media, to easier in learning process for Geography subject on the Natural Disaster Mitigation and Adaptation topic. The secondly is for the school which approve for test product. And the third is for the Faculty and University the researcher cannot do the research about developing media 3D-AP and to improve the validity of product, material and design media. The last for the researcher to completely the research and developing media.

E. Development Assumption

The development assumptions of this study can be describe as follow:

1. 3D-AP learning media can enhance the learning effectivity in the geography learning on the topic *Natural Disaster Mitigation and Adaptation* at MAN Pasuruan.
2. 3D-AP learning media will make students more active in their learning activities.

3. The absence of learning media in Geography that is based on 3D-AP at MAN Pasuruan.

F. Scope of Development

The scope of the development in this study can be explained as follow:

1. This Research and Development of 3D-AP learning media is particularly practiced and utilized at MAN Pasuruan.
2. This study is aimed to reveal the efectivity of the usage of 3D-AP-learning media on Natural Disaster Mitigation and Adaptation at MAN Pasuruan.

G. Product Specifications

The product that is developed in this research is 3D-AP learning media of Geography with the product specifications as follows:

1. The material in this research is a topic in geography subject namely *Natural Disaster Mitigation and Adaptation* that contain of picture, video, and test that is suitable with core and basic competency of Geography subject in the tenth-grade class.
2. Product that is going to be developed in this research is an interactive learning media designed by using 3D-AP.
3. The product in this research is packed in the form of 3D presentation containing the instructions embedded in it to make it easier for students and teachers to operate this media.

H. Previous Studies

There are several previous studies on development of 3DAP as learning media first is the research by Fayruz Zuhadi Pradana, *Peningkatan Hasil Belajar Siswa Kelas X TGB 3 Dengan Media Pembelajaran Aurora 3D Presentation Pada Mata Pelajaran Ilmu Bangunan Di SMK Negeri 2 Surabaya*, Universitas Negeri Surabaya.¹⁰ According to Fayruz Zuhadi Pradana the result of her research is showed that the utilized 3DAP in the Ilmu Bangunan subject can improve the students the learning result average value is 30% and the result the validity media is 83% means that 3DAP very proper as a media to improve the student result of study.

Wanda Ika Wahyuni, Elva Yasmi Amran, Herdini, *Pengembnagan Media Pembelajaran Kimia Berbasis Aurora 3D Dimension (3D) Presentation Pada Pokok Bahasan Hidrokarbon Untuk Kelas XI MIA SMA/MA*, Universitas Riau.¹¹ Based on research of Wanda Ika Wahyuni and friends explain that Aurora Dimension (3D) Presentation is valid and can be able as hydrocarbon learning media that result research shown the media validation score is 3,67 it is valid categories and from the design, pedagogic, content validation the score is 3,64 it is valid.

¹⁰ Fayruz Zuhadi Pradana, *Peningkatan Hasil Belajar Siswa Kelas X TGB 3 Dengan Media Pembelajaran Aurora 3D Presentation Pada Mata Pelajaran Ilmu Bangunan Di SMK Negeri 2 Surabaya*, Universitas Negeri Surabaya, 2015

¹¹ Wanda Ika Wahyuni, dkk, *Pengembnagan Media Pembelajaran Kimia Berbasis Aurora 3D Dimension (3D) Presentation Pada Pokok Bahasan Hidrokarbon Untuk Kelas XI MIA SMA/MA*, Universitas Riau. 2014

Tutut Her Rakhmawati, *3D-AP 2.012 sebagai Media Berbasis Multimedia Interaktif Untuk Pembelajaran Bahasa Arab di MTs Negeri Bobotsari*, Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Jurusan Pendidikan Bahasa Arab, 2013.¹² Based on the Tutut Her Rakhmawati research, describe that the 3DAP used in Arabic subjects is proper of being used as media of instruction with the result an increase in the average value of the results of the study by 40%.

Abim Ardhe Karisma, *Pengembangan Media Pembelajaran Berbasis Software Aurora 3D Presenattion Pada Mata Pelajaran Gambar Teknik Kelas X Kompetensi Keahlian Teknik Gamber Bnagunan SMKN 2 Depok Sleman*, Skripsi, Universitas Negeri Yogyakarta, 2015.¹³ According to Abim Ardhe Karisma, the research result showed that the impact of using 3D-AP in student result study increase from 75,00% into 90,62%, impact of student attitude changes as 8,76% between before and after using media, that media got the score 83,93 from validation material expert means that the media very good and from validation media expert got score 83,33 means the media very good.

¹² Tutut Her Rakhmawati, *3D-AP 2.012 sebagai Media Berbasis Multimedia Interaktif Untuk Pembelajaran Bahasa Arab di MTs Negeri Bobotsari*, Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Jurusan Pendidikan Bahasa Arab, 2013

¹³ Abim Ardhe Karisma, *Pengembangan Media Pembelajaran Berbasis Software Aurora 3D Presenattion Pada Mata Pelajaran Gambar Teknik Kelas X Kompetensi Keahlian Teknik Gamber Bnagunan SMKN 2 Depok Sleman*, Skripsi, Universitas Negeri Yogyakarta, 2015

For the purpose of systematizing these studies, those previous R & D thesis 3D-AP can be listed in the table follow:

No.	Name, Title of Thesis	Similarity	Differences	Originality of Research
1.	Fayruz Zuhadi Pradana, <i>Peningkatan Hasil Belajar Siswa Kelas X TGB 3 Dengan Media Pembelajaran Aurora 3D Presentation Pada Mata Pelajaran Ilmu Bangunan Di SMK Negeri 2 Surabaya,</i> , Skripsi Universitas Negeri Surabaya.	<ul style="list-style-type: none"> • Uses Aurora 3D Presentation as a independent variable 	<ul style="list-style-type: none"> • The dependent of variable uses student result study <p>The subject material uses ilmu bangunan</p>	<ul style="list-style-type: none"> • The Kind of research used classroom action research
2.	Wanda Ika Wahyuni, Elva Yasmi Amran, Herdini, <i>Pengembnagan Media Pembelajaran Kimia Berbasis Aurora 3D Dimension (3D) Presentation Pada Pokok Bahasan Hidrokarbon Untuk Kelas XI MIA SMA/MA,</i> Universitas Riau.	<ul style="list-style-type: none"> • Uses 3D-AP as a independent variable • Uses student Senior High School as object • Uses Research and development as a research methodology 	<ul style="list-style-type: none"> • Uses Chemistry as a material subject • Uses student reseult study as a dependet variable 	<ul style="list-style-type: none"> • Uses ADDIE as a prodecural Development
3.	Tutut Her Rakhmawati, <i>3D-</i>	<ul style="list-style-type: none"> • Uses Research and 	<ul style="list-style-type: none"> • Uses al-usroh as a topic 	<ul style="list-style-type: none"> • Uses Bahasa Arab

	<i>AP 2.012 sebagai Media Bebas Multimedia Interaktif Untuk Pembelajaran Bahasa Arab di MTs Negeri Bobotsari, Skripsi, Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Jurusan Pendidikan Bahasa Arab, 2013</i>	Developmen as research methodology	<ul style="list-style-type: none"> The object uses student Junior High School 	as learning subject
4.	<i>Abim Ardhe Karisma, Pengembangan Media Pembelajaran Berbasis Software Aurora 3D Presenattion Pada Mata Pelajaran Gambar Teknik Kelas X Kompetensi Keahlian Teknik Gamber Bnagunan SMKN 2 Depok Sleman, Skripsi, Universitas Negeri Yogyakarta, 2015</i>	<ul style="list-style-type: none"> Uses 3D-AP as a learning media development Uses Reserch and Development as research methodology 	<ul style="list-style-type: none"> Uses teknik gambar as a subject material The object uses SMK student 	<ul style="list-style-type: none"> Uses “Four-D” Thiagarajan

Table 1.1 Previous Studies

I. Definition of Terms

To make more easy understanding about many several terms in this research of Developing 3DAP Learning Media on *Natural Disaster Mitigation and Adaptation*, will be describe more detail as follow:

1. Definition of Geography Learning Media

Geography learning media is all of the terms of the real, imitated, manipulate, modification and simplification that can represent of geography objects and as a mediator in the geography learning in order to make it easier to deliver the geography material in the learning process, so that, geography learning media can make easier the student understanding and to enhance the effectivity in the aim of geography learning based on lesson plan.¹⁴

2. 3D-AP

3D-AP is a tool to make 3D (dimension) slide presentation. By using of 3D-AP we can make easy presentation better for picture, text, video model, data and has a many choose ways to displaying the presentation content. 3D-AP has a many presentation models and easy to make it. The easier of this software as follow:

- a) Support many kinds of content likes picture, text, video, 3D Model, Table, Navigation, Wall Picture, Graphic data, and Particle.
- b) Easy way to make presentation by taking from template available includes presentation templates, slide templates, and animation templates.

¹⁴ Sukan Perdana Prasetya. *Media Pembelajaran Geografi* (Yogyakarta:Penerbit Ombak), 2014, page. 7

c) Can publish in a many format. Can operated by directly or exported as a picture and image chronological¹⁵.

3. Natural Disaster Mitigation and Adaptation

Definition of Mitigation based on UU Number 24 Year 2007, explain that definition of mitigation is a series of efforts to reduce the disaster risk, by physical build or aware and increasing capability to facing the threat. Mitigation disaster is an important activity to tackling disaster, caused in this activity is a previous activity before the disaster happens to prevented and reduced the impact from disaster¹⁶.

Definition of adaptation is an effort to self-adaptation in the environment with make changes that direct to enhance the capability and springy power.

In the law of Penanggulangan Bencana number 24 Year 2007, explained the meant of disaster is a incidents or phenomenon that threaten and disturb the life of society caused by natural factor or non-natural factor so effecting the human victim, environment damage, wealth disadvantages and psychologist damage¹⁷.

¹⁵ Kusuma Hermawati. 2009, *Modul Membuat Slide Presentasi Dengan Aurora 3D Presentation(Online)* (<http://staff.uny.ac.id/sites/default/files/pengabdian/kuswari-hernawati-ssimkom/modul3DAurora-media-Presentation.pdf> accessed 22 April 2016, page 12)

¹⁶ Tim Penyusun ilmu Sosial. *Geografi Mata Pelajaran Peminatan Ilmu Pengetahuan Sosial SMA/MA Kelas X Semester 2* (Solo: Viva Prakindo, 2013), page.53

¹⁷ Ibid page.53

4. Definition of Learning Effectivity

Effectivity in the big dictionary of Bahasa Indonesia explained that effectivity from the effect word has a meaning consequence / effect, effectivity is a something that has an effect or consequence caused by, efficacious, have a result and a successes from the efforts or action. Effectivity in the learning process is an effort to enhance the goals of learning process that has been established in the lesson plan every learning process¹⁸.

The effectivity in this research 3D-AP it can be seen from:

- (1) Validity result from media expert, geography content expert, and subject in this research is tenth grade student MAN Pasuruan.
- (2) The student result study showed the signification differences between pretest and posttest.

J. Structure of the Study

Structure of Study in this research is dividing into five chapters; each chapter has a sub chapter. The structure of study will be explains in a paragraph in each chapter as follow:

CHAPTER I, have a contained of background of the researcher developing *3D-AP* geography learning media on *Mitigation Natural Disaster and Adaptation* for tenth grade at MAN Pasuruan. Based on the background

¹⁸ Tim Penyusun Kamus pusat Pembinaan dan Pengembangan *Bahasa. Kamus Besar Bahasa Indonesia* (Jakarta: Balai Pustaka, 1988), page.219

obtained the research questions. And then the objective of study development is a realization research questions to know the characteristics, the process and to know the effectivity of the *3D-AP* geography learning media on *Mitigation Natural Disaster and Adaptation* for tenth grade at MAN Pasuruan.

The next steps is explained about the significant of study will be given contribution of this research for knowledge, individual and institution. And then assuming development discuss about the researcher assuming that the basic reason about research and development of on *Mitigation Natural Disaster and Adaptation* for tenth grade at MAN Pasuruan. In this research the researcher limited the research by the scope development in order to become more directly, in this research includes the process of development media and the effectivity of the geography learning media using 3D-AP.

The Specification of the product that developing in this research is a media based on *3D-AP* that has modification become geography learning media, the content in that media suitable with core competition and basic competition geography for tenth grade on the mitigation natural disaster and adaptation topic. To support this research, the researcher added the previously study about development learning media using 3D-AP and explained in the originality of study. For make easily understanding the technical terms in this study will be explained in the definition of the terms. And the last in this chapter is structure of study discussion about the general explanation of each chapter in this research.

CHAPTER II, is review of literature that explained about the theoretical frame framework describe about the definition of learning media, 3D-AP, Natural Disaster Mitigation and Adaptation and the learning effectivity and last is explained about research roadmap of 3D-AP.

CHAPTER III, discuss about the research methodology. In this research used Research and development methodology. In this chapter also explained about the research method, research approach, the developing model, the procedure of development and the last is product trial includes design media, subject, kind of data, instrument and data analyze and the last is research procedural.

CHAPTER IV is discussed about result of study have a sub chapter, first is explain about the school profile of MAN Pasuruan, secondly explain the characteristic of 3D-AP, thirdly explain about the process of development 3D-AP, fourth is explain about the product of development 3D-AP, fifth discuss about the validation of product displays of subjects trial data, data analyzed and product revision and the last is the effectiveness of the developing of 3D-AP geography learning media on Mitigation Natural Disaster and Adaptation for tenth grade at MAN Pasuruan

CHAPTER V explained about conclusion and recommendation product utilization, of the result of study the developing of 3D-AP geography learning media on Mitigation Natural Disaster and Adaptation for tenth grade at MAN Pasuruan.

CHAPTER II

REVIEW OF LITERATURE

In this chapter discuss about, A. Theoretical Frame work which consist of 1. Definition of Learning Study which is consists of the aim, the benefit of learning media, and the Function of learning media, 2. 3D-AP, 3.Natural Disaster Mitigation and Adaptation Topic, 4.Learning Effectivity

The last in this chapter is discussed about B. Research Roadmap.

A. Theoretical Framework

1. The Definition of Learning Media

The word “*media*” is derived from the Latin language is “*medius*” which literally means ‘the middle, or ‘intermediate’. In the Arabic language, *media* is an intermediary or introductory message from the sender to the recipient of the message. Based on Gelarch & Ely said that the media when it understanding in generally are human, material, or event that can build the student condition to reach the knowledge, skill, and attitude. Means that, teacher, text book, and school environment as media. In the specific means, the definition of media in the learning process is a graphics tools, photography’s or electronic to catch, processing, and arrange the verbal or visual information¹⁹.

Definition of media based on Association for Educational Communication and Technology (AECT) said that media is all form to

¹⁹ Azhar Arshad, *Media Pembelajaran* (Jakarta:Raja Grafindo Persada. 2002), page 3

transfer information. Based on Donlad P. Ely & Vernon S. Gelarch, definition of media divide into two terms are limited meaning and wide meaning. Limited meaning that media have a shape like graphic, image, mechanic tool and electronic that used for catch, processing, and extend the information. Based on wide meaning media is the activity that can created a condition, so enable the students get the knowledge, skill, and new attitude²⁰.

Based on Sells and Richey media (medium) is a communication tool, it all anything that bring information or massages from information resources to recipient (includes film, TV, print media, radio, diagram etc. while the means of learning media is all of media that utilized to transfer information or massages with learning goals²¹.

From the explanation in the above, it can conclude that learning media in the learning process as teaching equipment to transfer information, the utilization of learning media it would be helpful the effectivity of the learning process as well as transferring information and learning content, and help the students to increase their understanding in the class.

- 1) The aims and benefits of learning media
 - a. Aims of Learning Media

The aims of learning media as an learning tools, such followed²² :

- (1) Facilitate learning process

²⁰ Ibid page.4

²¹ Ibid pagel.5

²² Hujair Sanaky, *Media Pembelajaran* (Yogyakarta : Safiria Insania Press, 2009), page.4

- (2) Enhance the learning effectivity in the class,
 - (3) Keeping the revelation between learning material and the learning goals
 - (4) Facilitate the student concentrated in the learning process.
- b. Benefits of Learning media

Benefit of the learning media as a learning tools, as followed:

- (1) Draw attention of student until student get the motivation of study.
- (2) Learning material will be more clearly, so student easier to understanding, and student enable to mastering the learning goals better.
- (3) Varied learning media, does not only verbal communication by directly speech from teacher, learning is not boring, and the teacher is not tired.
- (4) Student more doing study activities, caused by student not only pay attention to listening the teacher explanation, but their doing others activities likes observe, demonstrated etc.

In addition the others benefits of learning media in for teacher and student as follow:

- a) Benefits of learning media for teacher are :
1. Given orientation to direct the goals.
 2. Explained the structure of teacher well.

3. Given systematically teaching design better.
4. Teacher easier to control toward learning material.
5. Enhance the learning quality.

b) Benefits of learning media for students such follow ²³:

1. Enhance student motivation to study.
2. Given and enhance the student learning style.
3. Given the structure of learning material.
4. Given the core information systematically for student to study more easily.
5. Stimulated student to thinking and analyzed.
6. Create the condition and study situation without pressure and student can understanding learning material with systematically by the learning media.

c. Function of Learning Media

Based on Levie and Lentz said that fourth function of learning media, especially visual media are attention function, affective function, cognitive function, and compensantorise function. Each function will be described are follow:

1. Attention visual media is a core, that interesting and direct the student attention to concentrated to learning content related with the visual meaning of learning

²³ Ibid page 5

material. Oftentimes in the early learning process student is not interesting with the learning content or learning subject.

2. Affective function of visual media can visible form the level of student satisfied when study (or reading) pictorial text. Picture or visual symbol is can be able to appear the student emotion and attitude, likes race or social problems.
3. Cognitive visual media can see from the research findings that reveal the visual symbol or picture can smooth to rich the goal for understanding and remembering the information or message in the picture.
4. Compensators function of learning media shown from the result research that visual media give a context for understanding the text, help the week student in reading for organizing the information to reinforcement. In other words media has a function to accommodate the week student and understanding the content that presented verbally²⁴.

²⁴ Azhar arsyad, *Media Pembelajaran* (Jakarta:Raja Grafindo Persada 2002), page 16

2) 3D Aurora Presentation

a. Definition of 3D Aurora Presentation

3D Aurora Presentation is an equipment form of computer software for make 3D (dimension) slide presentation. With this software it is so easy to make a beautiful slide presentation includes picture, text, video, data and have a varieties presentations to display in slide presentation. 3D-AP have a many model and can make presentation more easily and interesting.

b. The Advantages of 3D Aurora Presentation as follow:

- (1) Navigation support various content, likes picture, text, video, 3D Model, table, navigation, Wall Picture, Graphic Data, and Particle.
- (2) Easy to make slide presentation by taking from the template place available, includes many template presentation, slide template, and animation template.
- (3) Can be able to publish in a various format. Can be run directly or export as a video a picture order.
- (4) Do not need advanced 3D (dimension)
- (5) Real space 3d (dimension), 3D (dimension) objects are real
- (6) Do not need learn Flash, Photoshop or 3D applications to make 3D (dimension) effect.

c. The Explanation of 3D Aurora Presentation

1. Work area of *3D-AP*

Windows *3D-AP* divide into fourth main areas are toolbar, slide list, rader Window, interactive window.

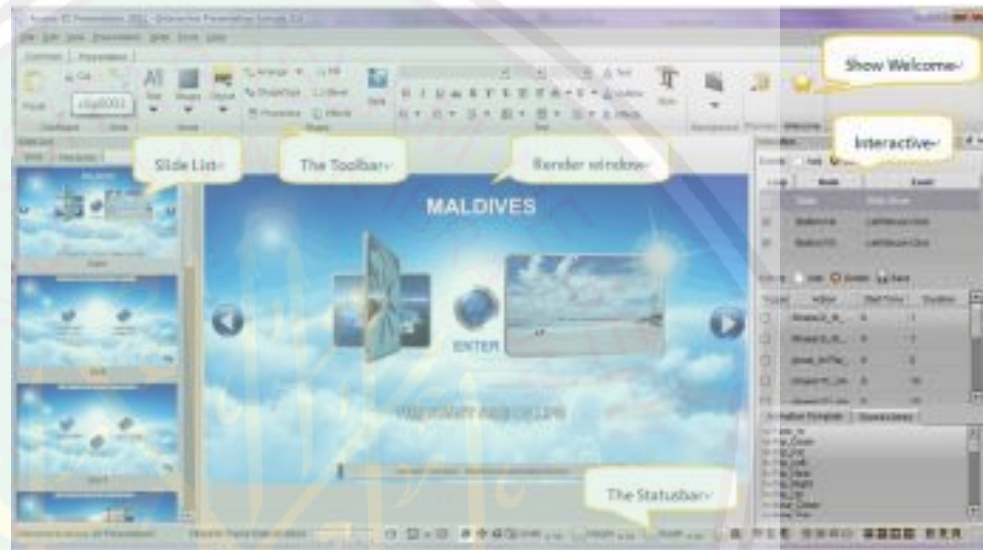


Figure 2.1 Work area of *3D-AP*

2. Welcome

Welcome window display the link tutorial and the example presentation file is already on there.



Figure 2.2 Welcome Display of 3D-AP

3. Menu bar

Provides the file operation menu and others function.

Figure 2.3 Menu bar of 3D-AP

4. Toolbar

The function 3D-AP can be access in the main toolbar. This toolbar divide into tabs in each group function suitable with the task.



Picture 2.4 Toolbar of 3D-AP

5. Slide List

Slide list provide all of access to all slide presentation.

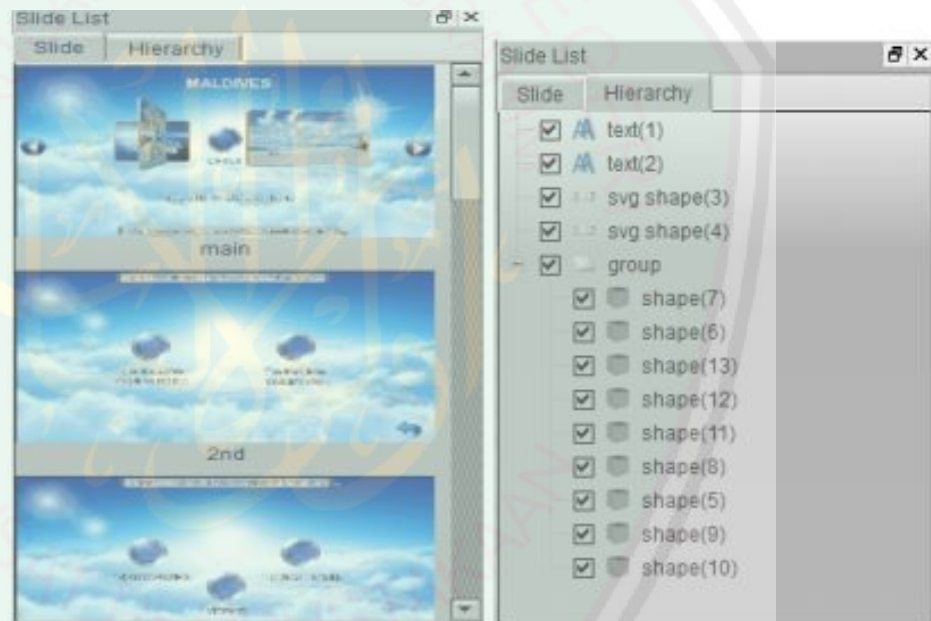


Figure 2.5 Slide List of 3D-AP

6. Rader Window

Rader window is areas to do all of activity likes editing text, shape and others object.



Figure 2.6 Rader Window of 3D-AP

7. Status bar

Status bar for provide the program to display the status massages and some buttons for fast operation.



Figure 2.7 Status Bar of 3D-AP

8. Interactive Window

Interactive Window consists of three parts. First are activity list, action activity, animation template and sound library.

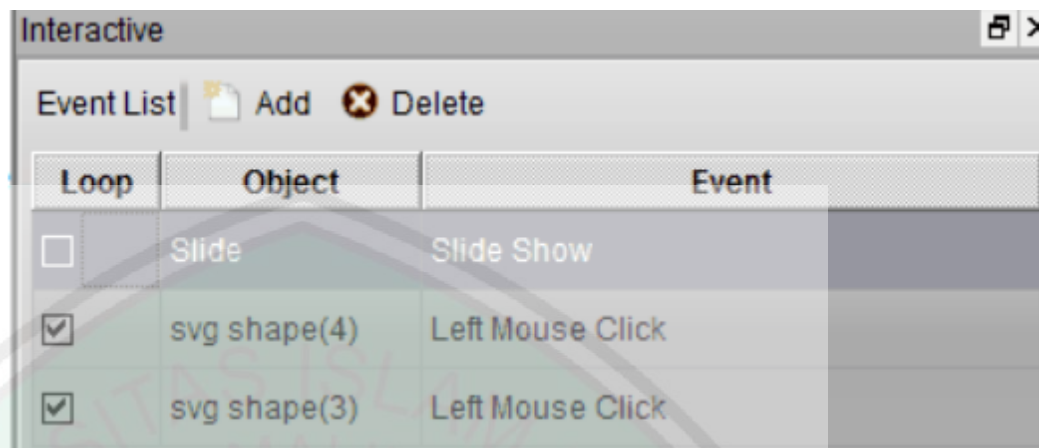


Figure 2.8 Interactive Window of 3D-AP

3) Natural Disaster Mitigation and Adaptation Topic

In this research, researcher chosen *Natural disaster mitigation and adaptation* as a topic in development geography learning media using 3D-AP because this topic is a new topic in geography's subject in curriculum 2013 in second semester. In a law of Permendikbud Number 69 in 2013 about basic standard and curriculum senior high school explained that in geography basic competence in tenth grade where the geography learning more emphasize in study about human being aspect in a spatial context and addressing environment²⁵.

For natural disaster mitigation and adaptation not regardless of the geological condition of Indonesia in the ring of fire areas, means that Indonesia including in prone disaster areas. So that the mitigation

²⁵ Permendikbud Nomor 69 Tahun 2013 tentang Kerangka Dasar Dan Struktur Kurikulum Sekolah Menengah Atas/Madrasah Aliyah Kompetensi Dasar, page.8

education have a function to give knowledge about natural disaster and how to prevent or mitigation of disaster. By natural disaster mitigation and adaptation topic hopefully can be able to build student experience and having conservation concept and ability to natural disaster mitigation.

a. Definition of Mitigation

Mitigation is a series of efforts to reduce risk, either through the building of awareness and physical or augmenting the capability of facing the threat of disaster. Disaster mitigation is an activity that serves as a disaster impact reduction actions, or attempts made to them reduces the victims when disaster occurs, either loss of life or property.²⁶

b. Concept of Mitigation

In disaster mitigation action, initial steps we have to do the study of disaster risk against the area. In calculating the risk of disaster is an area we have to know the hazards, vulnerabilities and capacity of a region that is based on the physical conditions and characteristic of its territory.

- (1) Hazard is an event which has the potential to cause the occurrence of an accident, injury, loss of life or loss of property. This can cause hazard or disaster. The danger

²⁶ Pusat Pendidikan Mitigasi Bencana (P2MB) Universitas Pendidikan Indonesia. Access Sunday April 9,2017 at 12.26 PM

was considered a disaster in had led to casualties and losses.

- (2) Vulnerability is a set of conditions that determine whether the hazard or dangers of artificial that happened to be able to causes disaster or not. A series of conditions generally can be both physical, social conditions and attitudes that affect the community's ability to conduct prevention, mitigation, preparation and follow-up responses to the impacts of hazards.

These kinds of vulnerabilities:

1. Physical Vulnerability: buildings, infrastructure, construction of the weak.
 2. Social vulnerability: poverty, the environment, conflict, high growth rates, children and women, the elderly.
 3. Mental Vulnerability: ignorance, not realizing, lack of self-confidence, and more.
- (3) Capacity is the ability to give a response to a specific with available resources (physical human, financial and others).

This capacity may be a local wisdom society told hereditary from generation to generation

- (4) The risk of disaster (Risk) is the potential loss due to a disaster in an area and a specific period of time that can be

either dead, injured, sick, endangered soul, the loss of a sense of security, evacuate, damage to or loss of property, and community activities. as a result of the combination of hazards, vulnerability, and the capacity of regions concerned.

c. Types of Mitigation

There are two kind of Mitigation such as:

3.1) Structural Mitigation

Structural mitigation technical effort is doing either naturally or artificial about infrastructure of mitigation. For the example is construction of retaining wall in the flow of river, conservation and reputation.

3.2) Nonstructural Mitigation

In Nonstructural is nontechnical efforts concerning adjustment and setting of human activities in order to be in line and in accordance with the structural mitigation efforts as well as other efforts. For the example prepare the map of disaster prone areas, and conducting the mitigation education for the society.

4) Learning Effectivity

In the learning concept, effectivity is a learning successes that measure from the levels of goal reached after the learning process is done. If all of

the learning goals are reached so the learning process is effective. In the learning process there are principles of teaching effectivity, as follow:²⁷

- a. Measure the previous knowledge belonging to the student.

Before teacher gives an instruction, teacher must collect the related information about the level of knowledge and skills of students.

- b. Consideration individual differences.

Learners have a difference in terms of ability, general talent, knowledge, and many others factors. Effective learning can be able develop the student to mastering the material, and participation in the different activities.

- c. Stated the purpose.

Learning objective must be accordance with the result of the standard and expected.

- d. Involved student in relevant practice.

The most effective learning experience is to encourage the learner to apply the skills that suitable with the result expected.

Participation of learners will be enhance learning effectivity.

²⁷ Sharon. E. Smaldino dkk, *Instructional Techonology & Media for Learning* (Jakarta ; kencana, 2011) page.22

B. Research Roadmap

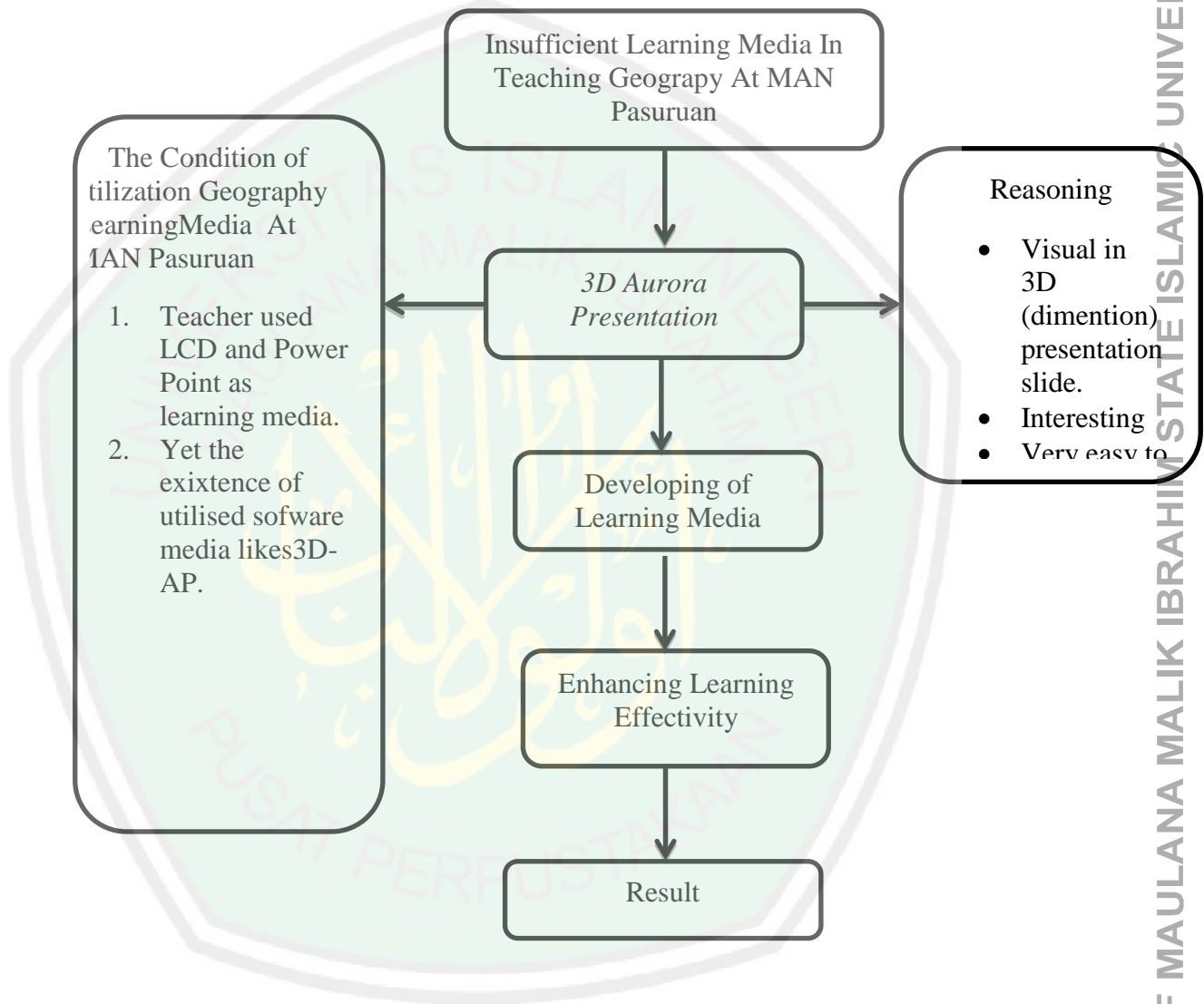


Figure 2.9 Roadmap Research of 3DAP Development

CHAPTER III

RESEARCH METHOD

In this chapter discuss about A) research approach, B) Research Approach of The Developing of Model, C) The Procedure of Development, D) The product Trial.

A. Research Approach

The kind of research in this study is research and development or (R & D). Research and Development is a series of steps to develop a new product or completed the existing product in order for to responsibility. Those the product develop is not only hardware shaped like book, module, learning equipment in the class or laboratory, but it can also be software shaped like computer program to processing educational model, learning activity, training, guiding, and evaluating of system management.²⁸

Based on Sugiono that the definition of research and development is the research methods used to produce a particular product, and test it for the effectiveness these products so that can have function in a large society , then the necessary to test the effectiveness of these products²⁹.

In the education, research and development or we know with the term of R & D, is the new thing. Stages in the research and development usually consist

²⁸ Triano, *Pengantar Penelitian Bagi Pengembangan Profesi pendidikan Tenaga Kependidikan* (Jakarta:Kencana Pranadas Media Group, 2010), page.206

²⁹ Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R & D* (Bandung : Alfabeta.2012), page 297.

of cycles for produced a certain product suitable with needs analysis, through the first steps design product, early trial for find the weeks, week repair, retrial, repair overall until found the ideal product.³⁰

According to Seels & Richey research and development as opposed to simple instructional development, has been defined as “the systematic study of designing, developing and evaluating instructional programs, processes and products that must meet the criteria of internal consistency and effectiveness.

Research and development based on Brog and Gall in the footnote about “product” explained “Our use of term” “product” includes not only material object, such as textbooks, instructional films and so on, but is also intended to refer established procedures and process, such as a method of teaching or method for organizing instruction”.

From the Brog and Gall explanation the product in the research and development is not always have a shape object or hardware such as textbooks, instructional film and so on. But it could be software such as computer program, learning in the classroom, library and laboratory. Based on Brog and Gall explanation that the product of research and development also can develop the software computer program as a learning media, in this study the product will be develop by the researcher is developing geography learning

³⁰ Wina Sanjaya. *Penelitian Pendidikan Jenis, Metode dan Prosedur* (Jakarta : Kencana Perdana Media Group. 2014), page 129.

media on natural mitigation disaster and adaptation for tenth grade at MAN Pasuruan using 3D-AP.

B. The Developing Model

Procedural development is descriptive model that explain the procedural steps that must be follow to produce a certain product. In this research of development learning media on natural mitigation disaster and adaptation for tenth grade using 3D-AP, the product will be develop by the researcher depart from learning analysis of geography learning process at MAN Pasuruan. So to produce a product that can measure media researcher used the developing procedure according to Dick and Carrey.³¹ The stages of research and development as follow:

1. Identification of Learning objective

In the first step in research and development process is determine the information and skills that will be to teach the students. And then identify the learning objective, it can be derived from the learning goal, performance analysis, student needs analysis and learning difficulties.

2. Learning Analysis

After the identification of the learning objective, the next steps is determine the steps that are performed in order to the purpose of

³¹ Ibid page 223.

learning achieved. Learning analysis process will be decide the knowledge , skill and attitude.

3. Learner Analysis and Context

Learner analysis and context which includes the ability, attitude and the characteristic of the early learner in the learning background. And it also includes the characteristic of learning background when knowledge and new skill will be used to produce a product according to need analysis.

4. Defining Learning objective

Describe the general objective into more specifications objective. In this stages the researcher doing translating the objective general from the competency standard into the operational definitions with certain indicators.

5. Development Instrument

In this stage developer has duties to developing the instrument for measure effectivity the product will be developing. Instrument relating to specific objective have a form the result of study, whereas the instrument relating with the product design can be either questionnaire or check list.

6. Development Learning Strategy

Developing of learning strategy, which is specific to help learner to reach the learning aim by the learning strategy designed. If

the developer would to develop the certain learning design what the right learning strategy to support these design.

7. Development and Choosing Learning Material

In this stage is selecting the learning material. Next step is to produce learning materials within accordance with learning strategies. Learning materials are usually consists of a guide for learners, learning materials, and assessment.

8. Arrangement and Formative Evaluation

After learning of the draft is finished then the next step is do the evaluation. The evaluation was conducted to collect data used to identify problems in the learning and find an opportunity to make learning into a more either.

9. Revision

The last steps in this design are doing the revisions of the product. Data from the formative evaluation are useful for knowing the product week of the product and next as well as to repaired the product quality.

10. Designing and conducting a summative evaluation

The final step in product development is to do a summative evaluation. A summative evaluation is the evaluation of the products to produce absolute score or relative and occurs after the product is evaluated in a formative and revised.

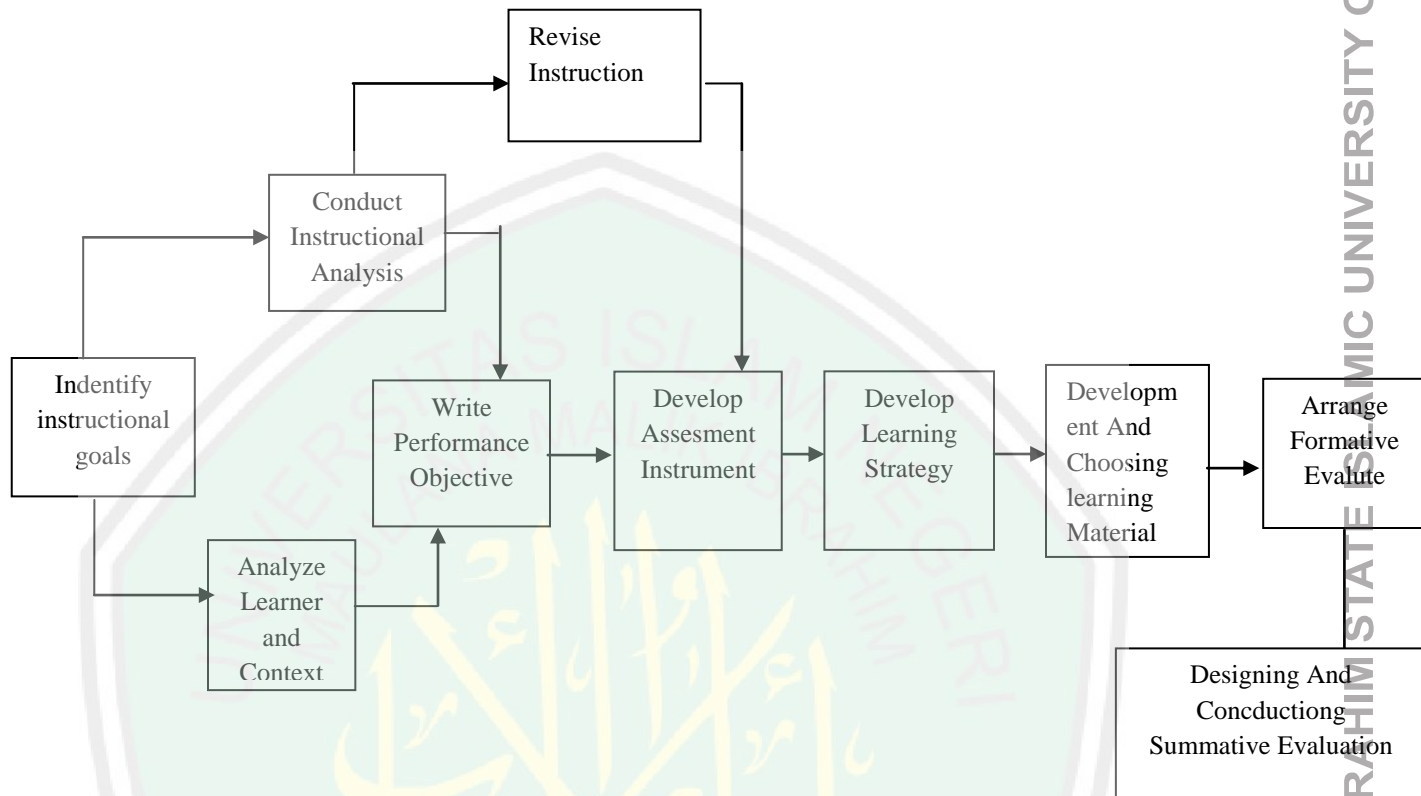


Figure 3.1

Component Learning System Dick and Carey

Resources: adaptaed from Walter Dick & Lou Carey (2001) The Systematic Design of Intruction. NY:

Longman. Inc. page 2.

C. The Procedure of Development

Procedural development is a part to explain the steps of development the learning media. In this research, researcher adapted Dick and Carrey procedure development, that researcher adapted into tenth stages development as follow:

1. Identify instructional goals

In this step is determined the information and skill that will to be teach the students. In this research for developing 3D-AP the learning media in Geography Subject at MAN Pasuruan the learning objective in is give knowledge about natural disaster and how to prevent or mitigation, by the natural mitigation and adaptation student can be able to have experience and conservation concept and ability to natural mitigation. In the Geography learning process at MAN Pasuruan teacher used power point as a learning media for Natural disaster mitigation and adaptation topic, hopefully by developing 3D-AP as a learning media for Natural disaster mitigation and adaptation topic it can able to help the student more easier to understanding the material by using 3D (dimension) presentation application and help the learning process more active and efficient.

2. Conduct Instructional Analysis

After identification the learning objective of developing 3D-AP learning media on natural disaster adaptation and mitigation topic the next step is conduct instructional analysis in this steps that are performed in order to learning achieved in geography subject.

The aim in this stage is to study the product objective that will be developing. In this research the product developing is conduct analyze about geography subject on natural disaster mitigation and adaptation, based on Permendiknas number 69 years 2013. The topic of natural disaster and mitigation is a new topic in the geography subject. This topic consists of materials that enable students having experience and ability on mitigation disaster.³² This is because geography learning put more emphasize in human being aspects within spatial context. Through this research and development on 3D-AP it is hoped that it is going to make students increase their interests to study with this 3D-AP and its slide presentation in which equipped with (embedded) navigation attract students to deepen their comprehension.

3. Analyze Learner and Context

From the need analysis stages the next stages is analyze the learner context, in this stage is conducted the primary learning condition, skill achievement, and learning background. At MAN Pasuruan the primary condition of Geography learning for natural

³² Permendikbud Nomor 69 Tahun 2013 tentang Kerangka Dasar Dan Struktur Kurikulum Sekolah Menengah Atas/Madrasah Aliyah Kompetensi Dasar, page.8

disaster mitigation and adaptation topic process is the teacher uses power point presentation (PPT) and LCD equipment to present her material, teacher used a conventional media meanwhile the students with learning also less interested, beside the lack of supporting picture for sub material this happened made students as learner just take and not interest with learning process. Most of student more interesting with learning process which uses many picture, video and some of instructional text. Based on the factual condition of geography learning at MAN Pasuruan, I decided to develop 3D-AP as geography learning media on the topic “Natural Disaster Mitigation and Adaptation”. By using 3D-AP hopefully it can help teacher and student learn interactively and easily to study in the class in enhancing the effectivity of learning geography at MAN Pasuruan. 3D-AP is very useful to create vibrant and vivid looking presentations.

4. Write Performance Objective

This stage is to describe the general objective into particularly goal that more specific and organize as the objective of the product. For the 3D-AP learning media on natural disaster mitigation and adaptation topic is enable students having experience and ability on mitigation disaster. According to Richard E. Mayer Research Instructional message from multimedia there are there the first is the idea of instruction comprise with communication and presentation. Secondly is students understanding with improve the learning

outcome and the last is instructional message from multimedia uses picture, video or animation.³³

Through Geography is the study of life on the surface of the earth, Teaching physical geography should not be treated similarly with human geography particularly in terms of its learning media, so need the media like 3D-AP learning media to help the student more easy to understanding the material, interest on learning activity not passive and can be contribute with new idea on the learning process.

5. Develop Assessment Instrument

This is a main stage in the appraisal series of development product. Validation design is an activities process to appraisal the feasibility of media will be develop to the expert validation. Validation undertaken to design media expert, geography content expert, and teacher geography's subject toward the media then evaluated and giving suggestion in product develop. From the evaluate and suggestion from the validation expert used for repair and revise the media.

6. Develop Learning Strategy

In this stage the develop learning strategy is choosing the learning strategy to get present the 3D-AP learning media. The researcher used demonstrated strategy for natural disaster mitigation

³³ Benny A. Pribadi, *Model Desain Sistem Pembelajaran* (Dian Rakyat:Jakarta,2010) page 11

and adaptation learning at MAN Pasuruan to make deepen comprehension of student of mitigation natural disaster.

7. Development and Choosing Learning Material

The aims in these stages are development and choosing learning material it can organize as text book and learning media. In this research the learning material is natural disaster and mitigation this is a new topic in the geography subject. This topic consists of materials that enable students having experience and ability on mitigation disaster, based on this condition the researcher develop geography learning media based on 3D Aurora Presentation. By using 3D-AP hopefully it can help teacher and student learn interactively and easily to study in the class in enhancing the effectivity of learning geography at MAN Pasuruan. 3D-AP is very useful to create vibrant and vivid looking presentations.

8. Arrange formative Evaluate

In this stages is arrange and formative evaluate during the researcher developing process, procedure, program or developing product. Dick and Carrey recommended the three steps formative evaluation process as follow:

(1) *Prototype trial*, that trial into one-to-one trying out or trial to one subject. For the prototype trial is undertaken Validation design is an activities process to appraisal the feasibility of media will be develop to the expert validation. Validation undertaken to design

media expert, geography content expert, and teacher geography's subject. From the evaluate and suggestion from the validation expert used for repair and revise the media.

(2) *Small group trial*, there are six until eight subject. After the media has validation the next step is trial into small group to six until eight subject before the media tested in the field trial.

(3) *Field trial* a whole class of learners. For the subject of field trial, take 1 class with 34 students. The subject trial will be comparing the result study before using 3D-AP media, that with pretest by individual and also post-test after using 3D-AP by individual activity to view the effect result study of learning outcomes by using 3D-AP.

9. Revise Instruction

The last steps in this design are doing the revisions of the product. Data from the formative evaluation are useful for knowing the product weak of the product and next as well as to repaired the product quality.

10. Designing and Conducting Summative Evaluation

The final step in product development is to do a summative evaluation. A summative evaluation is the evaluation of the products to produce absolute score or relative and occurs after the product is evaluated in a formative and revised. After validation and evaluate that the product feasibly stated by validator expert, and the media has

been test to the student at tenth grade in MAN Pasuruan by pretest and posttest result. From the student evaluation by used 3D-AP how the effectivity of the 3D-AP media and learning outcomes of students before and after using the media.



D. The Product Trial

The aim of product trial is for collecting the data and to get the information about the validation of the media and effectivity of the product 3DAP. Product trial conducted in 3 cycles before doing test the 3D-AP learning media, first researcher conducted the review of validation by content material experts and second media experts, then the last is followed with review from geography's teacher subject at MAN Pasuruan.

The review of product trial as follow:

1. Review Validator of Content Material

For validator content material researcher appointed lecture Mrs.Neni Wahyuningtyas,M.Pd. She is lecture of Introduction of geography, regional geography, geology, cartography, and demography at UIN Maliki Malang.

2. Review Validator of Design and Media

For validator of Design and media researcher appointed Mrs.Umammah,M.Pd. she is lecture of developing learning media and experts in developing media at UIN Maliki Malang.

3. The Geography's Teacher Subject at MAN Pasuruan

Before doing the test of 3D-AP at tenth IPS grade, the media showed by geography's teacher subject is Mrs.Dini Islamy S.Pd showed that 3D-AP already validation and revise and need a suggestion in order the media to be better before tested.

4. Subject Trial

After the validation is done, the next stage is 3D-AP is ready to be tested and uses for tenth IPS grade at MAN Pasuruan. Subject trial in this research is students in tenth IPS-1 grade at MAN Pasuruan. For the subject trial, take 1 class with 34 students. The subject trial will be comparing the result study before using 3D-AP media, that with pretest by individual and also post-test after using 3D-AP by individual activity to view the effect result study of learning outcomes by using 3D-AP.

E. Types of Data

1. The Methods of data collection

The methods of data collection in this research used qualitative and quantitative data. For the quantitative data researcher used questionnaires to get the result from validator product to know the effectivity of development 3D-AP learning media on natural disaster mitigation and adaptation.

For the qualitative data researcher used interviewed with teacher geography's subject, to get the information about the condition of geography learning process and the utilization of geography learning media at MAN Pasuruan.

2. Instrument Data Collecting

To collect the data, researcher used instrument data will be describe as follow:

a) Interview

Interview conducted with Mrs. Dini Islami S,Pd as geography's teacher subject in tenth grade at MAN Pasuruan. The interview was conducted to gather information about the utilized of geography learning media in tenth grade at MAN Pasuruan.

b) Questionnaire

Questioner used to gather data about the appropriateness of teaching media components, precision of planning or precision of learning design, media content and the interesting and the effectiveness of learning media. Questionnaire is intended to validator subject material expert and design media expert about Development 3D-AP learning media natural disaster mitigation topic. Based on the questionnaire results from the validator will be known whether the development of 3D-AP learning media on Natural disaster mitigation and adaptation topic needs to be needed revision or not.

c) Test

The test is performed by the subject trial is students tenth IPS-1 grade at MAN Pasuruan. The test divided into 2 test, first is pretest conducted before students are given treatment used 3D-AP, and then the post-test conducted after students are given treatment used 3D-AP. Then the result of pretest and post-test

will be compared to see the effectiveness of learning to use 3D-AP.

F. Data Analysis

1. Descriptive Analysis Data

For the validation of the product, the data get from questionnaire and analyze following formula:

$$P = \frac{\sum x}{\sum x_1} \times 100\%$$

Descriptions:

P = Percentages of search

$\sum X$ = The total number of respondents in 1 item.

$\sum X_1$ = The total score of Answers in 1 item

100 = Constant

Whereas the basis and the guideline for determining the level of validity as well as the making basis for revising materials using qualifications assessment as follows:

Table 3.1
Qualification of Level Validity Feasibility Criteria Based on
Percentages³⁴

Percentages (%)	Level Validity Feasibility Criteria
90 – 100	Very Valid, no revision
75– 89	Valid, no revision
65 – 74	Enough Valid, need revision
55 – 64	Less Valid, need revision
0– 54	Very less Valid, Totally Revision

Based on the table above, the level of qualification feasibility the validity of the media development, media it can be said to be valid if obtained score 75, then the media is a good media obtained based on the question form validation assessment of expert material, media experts, and geography teacher.

2. Result Test Analysis

Data analysis the results of tests used to measure the level of comparison the result of learning, the learning result obtained are used to compare the result of pretest and the result of posttest.

To calculate the rate of comparison may be using t-test, as for the formula used is³⁵ :

³⁴ Sugiyono, *Metode Penelitian Pendidikan Kualitatif, Kuantitatif dan R&D* (Bandung: CV Alfabeta, 2009), pages.135

³⁵Triyono, *Metodologi Penelitian Pendidikan*, Penerbit Ombak (Yogyakarta :2013), page.234

$$t = \frac{x_1 - x_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

Description:

x_1 = mean sampel 1

x_2 = mean sampel 2

s_1^2 = simpangan baku sampel 1

s_2^2 = simpangan baku sampel 2

n = total of sampel.



CHAPTER IV

RESULT RESEARCH

In this research discuss about (A) Profile of MAN Kota Pasuruan, (B) The Characteristic of 3D-AP, (C) The Process of Development 3D-AP, (D) The Product of Development 3D-AP, (E) Validation of Product, (F) Analysis Data of 3D-AP,(G)The Result of The Test, (H) Product Revision (I)The Effectiveness about Learning, as follow:

A. Profile of MAN Pasuruan

1. Introduction

The challenges of globalization and social change are very perceived impact for the world education. Changing the value of the social economic and cultural in line with the changing patterns of life and a way of looking (mindset) community. The impact of following is increasingly diverse demands and a selective institution. Should not be no “ Madrasah” as part of the educational institutions are also increasing driven to be able to meet the expectations of the community.

Starting from the framework of thought above, necessary measures are intelligent and creative to mere form activities and product is generate so MAN Kota Pasuruan fore can become a quality Islamic education, popular and competitive.

a. Identity of The Madrasah

The Name Madrasah : MAN Kota Pasuruan

NSM : 31135750301

Establish	: 27 th , September, 1967
SK. Dep. Agama No	: 97 year 1967
Addresses	: Jl. Dr. Wahidin Sudirohusodo No.59
Sub	: Bugul Kidul
District	: Kota pasuruan
Province	: Eat java
Postal Code	: 67126
Phone	: (0343) 41290 - 426841

2. Vision and Mission of The Madrasah

a. Vision

“Connecting Student Who Believe And The Nation, As Well As Have Competitiveness In The Field Of Science, Technology, Arts, Sport, And In Environment Knowledge”

b. Mission

1. Developing the attitude, behavior, and Islamic Charity,
2. Implementing the learning, guiding effectively so that each student can develop optimally, accordance with their potential.
3. Build the spirit of excellence intensively to all citizens of the Madrasah in both of academic and non-academic achievement

4. Creating the healthy, clean and beautiful environment of the Madrasah.
5. Encourage and assist and facilitate student to develop the aptitude and interest, so that it can be developed in a more optimal.
6. Develop the life skills in any educational activities.
7. Develop sensitivity to the environment.
8. Apply the participative management by involving the entire citizens of Madrasah and Committee of Madrasah.
9. Gain the trust of the community by involving the entire citizens

3. A Brief History of The Founding of the Madrasah

Founded in 1967 as a State Islamic institute school preparation Pasuruan (SPIAIN) and building on Jl. Dr. Wahidin Utara 59 that controlled by Local Government TK. II Kotamadya Pasuruan (Eks. Foundation Jaya Student in 1966). Subsequently submitted for occupancy SPIAIN in 1969 standing faculty of Shari'ah IAIN Sunan Ampel branch Pasuruan with Dean Drs. Abdul Jalal HA, and Deputy Dean Drs. Fath Al Mubin Djaka. Then in 1974 Faculty of Sharia's Branch Pasuruan removed along with several branches in others areas and along with I the SPIAIN renamed MAAIN Pasuruan.

B. The Characteristic of 3D Aurora Presentation

Aurora 3D Presentation is a powerful tool for 3D-AP, and makes easily to generate cool presentation for image, text, video, model and data, and choose many ways to display content. Aurora 3D Presentation has many kinds of presentation mode and can create it from template easily. In this research media that develop as a characteristic such as:

1. Form Media

For the form of the media is a slide presentation based on 3D-AP with the several content menu that can to use when click the button icon of the content menu available. There are several menus in the 3D-AP learning media as follow:

- a. Cover is the first slide is displays about the welcome page and shows the title of the learning media, and there is **PLAY** button to enter the home menu of media.
- b. Home Menu slide is the main slide of the media and has a several menu to used. There are several menus in the home menu such as KIKD, Material, Direction, profile of developer, Quiz and exit.
- c. KI/ KD is the menu that describe content about core competence basic competence and indicators of geography learning on natural disaster mitigation and adaptation material.
- d. Material is the menu describe about the main material of natural disaster mitigation and adaptation. There are the

material in this menu are describe about the concept of mitigation and the natural mitigation steps. In each natural mitigation material slide completed with animation video about natural disaster mitigation.

- e. Quiz is the menu has a content of evaluation with multiple choice questions packed by Wondershare quiz creator.
- f. Direction is a menu that have a content of the direction button in the media, there are several button in the media, so this slide can make easy direction to use this media.
- g. Profile of developer menu is describe about the profile of media developer information.
- h. Exit is menu to exit or close the media

2. Content Media

For the content the 3D-AP Learning Media on Natural Disaster Mitigation and Adaptation describe about the concept of mitigation, natural disaster and how to mitigate the natural disasters. In generally, 3D-AP media describe about the several mitigation of the natural disaster likes flood, earthquake, tsunami, and landslide and mountain eruption. In each mitigation of natural disasters material describe about the how the effort and what we should do before, in the event of disaster and after the occurrence of the disaster.

But for the specific product of 3D-AP learning media describe about the mitigation disaster of flood, because the media develop

based on the learning analyze of geography learning at MAN Pasuruan for tenth IPS grade students. The basic of the material is the mitigation of floods, because Pasuruan city is areas prone to flood. Hopefully with the 3D-AP learning media on natural disaster mitigation and adaptation students has an ability to mitigate the natural disaster, prevent the disaster, and have knowledge about environment culture. Not only is it, in the learning content has an ayah Al-Qur'an surah AR-RUM ayat 41:

ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيُذِيقَهُمْ
بَعْضَ الَّذِي عَمِلُوا لَعَلَّهُمْ يَرْجِعُونَ ﴿٤١﴾

“Corruption has appeared throughout the land and sea by [reason of] what the hands of people have earned so He may let them taste part of [the consequence of] what they have done that perhaps they will return [to righteousness].

This ayah has relevant with natural disaster mitigation and adaptation material about the damage has appeared throughout the land and sea by the human and Allah may let them taste of consequence what they have done that perhaps they will return.

C. The Process of Development 3D Aurora Presentation

This part will be describe about the result of The Process Developing 3D-AP Learning Media On Natural Disaster Mitigation And Adaptation To Enhance The Learning Effectivity For Tenth Grade Students At MAN Pasuruan. for the process conducted the media, researcher used “Dick & Carrey” model. Before made a learning media researcher do the pre observed and interview with geography’s teacher at MAN Pasuruan the process followed with Dick & Carey steps there are:

1. Identify instructional goals

In this research for developing 3D-AP the learning media in Geography Subject conducted at MAN Pasuruan in the X-IPS class also interview with geography’s teacher mrs.Dini Islamiyah. Researcher also observed learning facilities as class room and the geography learning process at MAN Pasuruan.

The learning objective in this media is give knowledge about natural disaster and how to prevent or mitigation, by the natural mitigation and adaptation student can be able to have experience and conservation concept and ability to natural mitigate. In the Geography learning process at MAN Pasuruan teacher used power point as a learning media for Natural disaster mitigation and adaptation topic, by developing 3D-AP as a learning media for Natural disaster mitigation and adaptation topic it can able to help the student more easier to

understanding the material by using 3D (dimension) presentation application and help the learning process more active and efficient.

2. Conduct Instructional Analysis

In this research the product developing is conduct analyze about geography subject on natural disaster mitigation and adaptation topic based on need analysis and observe in the learning process.

After find out about classroom and the learning situation according to observe before made a learning media based on 3D-AP. The next step is plan related with core competence (KI), basic competence (KD) and indicator of learning on natural disaster mitigation and adaptation topic. In MAN Pasuruan used curriculum 2013 and for the minimum value is 75 that student must be achieve the value standard.

Based on Permendiknas number 69 years 2013 The topic of natural disaster and mitigation is a new topic in the geography subject. This topic consists of materials that enable students having experience and ability on mitigation disaster.³⁶ This is because geography learning put more emphasize in human being aspects within spatial context. Through this research and development on 3D-AP it is hoped that it is going to make students increase their interests to study with this 3D-AP and its slide presentation in which equipped with (embedded) navigation attract students to deepen their comprehension.

³⁶ *Permendikbud Nomor 69 Tahun 2013 tentang Kerangka Dasar Dan Struktur Kurikulum Sekolah Menengah Atas/Madrasah Aliyah Kompetensi Dasar*, page.8

3. Analyze Learner and Context

Based on the observation at MAN Pasuruan the preliminary condition of Geography learning for natural disaster mitigation and adaptation topic process is the teacher uses power point presentation (PPT) and LCD equipment to present her material, teacher used a conventional media meanwhile the students with learning also less interested, beside the lack of supporting picture for sub material this happened made students as learner just take and not interest with learning process.

Most of student more interesting with learning process which uses many picture, video and some of instructional text. Based on the factual condition of geography learning at MAN Pasuruan, I decided to develop 3D-AP as geography learning media on the topic “Natural Disaster Mitigation and Adaptation”. By using 3D-AP hopefully it can help teacher and student learn interactively and easily to study in the class in enhancing the effectivity of learning geography at MAN Pasuruan. 3D-AP is very useful to create vibrant and vivid looking presentations.

4. Write Performance Objective

This stage is to describe the general objective into particularly goal that more specific and organize as the objective of the product. For the 3D-AP learning media on natural disaster mitigation and adaptation topic is enable students having experience and ability on mitigation

disaster. According to Richard E. Mayer Research Instructional message from multimedia there are there the first is the idea of instruction comprise with communication and presentation. Secondly is students understanding with improve the learning outcome and the last is instructional message from multimedia uses picture, video or animation.³⁷

Through Geography is the study of life on the surface of the earth, Teaching physical geography should not be treated similarly with human geography particularly in terms of its learning media, so need the media like 3D-AP learning media to help the student more easy to understanding the material, interest on learning activity not passive and can be contribute with new idea on the learning process.

5. Develop Assessment Instrument

This is a main stage in the appraisal series of development product. Validation design is an activities process to appraisal the feasibility of media will be develop to the expert validation. Validation undertaken to design media expert, geography content expert, and teacher geography's subject toward the media then evaluated and giving suggestion in product develop. From the evaluate and suggestion from the validation expert used for repair and revise the media.

6. Develop Learning Strategy

³⁷ Benny A. Pribadi, *Model Desain Sistem Pembelajaran* (Dian Rakyat:Jakarta,2010) page 11

In this stage the develop learning strategy is choosing the learning strategy to get present the 3D-AP learning media. The learning strategy used by learning activity in the class and demonstration the 3D-AP learning media that requires active students in learning process. The assessments conduct with individual test, there are two kind of test pretest and post-test.

7. Development and Choosing Learning Material

In this research the learning material is natural disaster and mitigation this is a new topic in the geography subject. This topic consists of materials that enable students having experience and ability on mitigation disaster, based on this condition the researcher develop geography learning media based on 3D Aurora Presentation. From the need analysis the next stages is determine the design of the product includes determine of design media, learning strategy, organize material, what kind of task, evaluate matter, picture, video that have correlation with natural disasters mitigation and adaptation topic and the 3D-AP learning media has a characteristic in a form menu likes cover, KI/KD, quiz, direction and content material with additional animation movie of natural disaster mitigation.

By using 3D-AP it can help teacher and student learn interactively and easily to study in the class in enhancing the

effectivity of learning geography at MAN Pasuruan. 3D-AP is very useful to create vibrant and vivid looking presentations.

8. Arrange formative Evaluate

In this stages is arrange and formative evaluate during the researcher developing process, procedure, program or developing product. Dick and Carrey recommended the three steps formative evaluation process as follow:

(1) *Prototype trial*, that trial into one-to-one trying out or trial to one subject. For the prototype trial is undertaken Validation design is an activities process to appraisal the feasibility of media will be develop to the expert validation. Validation undertaken to design media expert into two cycles, geography content expert into two cycles, and teacher geography's subject into cycles toward the media then evaluated and giving suggestion in product develop. From the evaluate and suggestion from the validation expert used for repair and revise the media.

(2) *Small group trial*, there are six until eight subject. After the media has validation the next step is trial into small group to six until eight subject before the media tested in the field trial. The subject is the student of X-IPS 1 with only take 6 students to tested the media.

(3) *Field trial* a whole class of learners. For the subject of field trial, take 1 class X-IPS 1 with 34 students. The subject trial will be comparing the result study before using 3D-AP media, that with pretest by individual and also post-test after using 3D-AP by individual activity to view the effect result study of learning outcomes by using 3D-AP.

9. Revise Instruction

The last steps in this design are doing the revisions of the product. Data from the formative evaluation are useful for knowing the product week of the product and next as well as to repaired the product quality.

10. Designing and Conducting Summative Evaluation

The final step in product development is to do a summative evaluation. A summative evaluation is the evaluation of the products to produce absolute score or relative and occurs after the product is evaluated in a formative and revised. After validation and evaluate that the product feasibly stated by validator expert, and the media has been test to the student at tenth grade in MAN Pasuruan by pretest and posttest result. From the student evaluation by used 3D-AP how the effectivity of the 3D-AP media and learning outcomes of students before and after using the media.

D. The Product of Development of 3D Aurora Presentation

This chapter will describe about the result of Development of 3D-AP Learning Media On Natural disaster Mitigation And Adaptation To enhance The Learning Effectivity For Tenth Grade Students At MAN Pasuruan done in several stages are:

1. The First Slide



Figure 4.1 The First Slide Opening

The first slide in the 3D-AP there is **Play** button is the enter Home Menu on the 3D-AP.

2. Home Menu Slide

In Home menu slide, there are several button menu that includes **KI/KD** button menu is enter the content that describe about the main competence, basic competence and the indicators of natural disaster mitigation and adaptation material, **Material** button is enter the material of natural disaster mitigation and adaptation, **Quiz button** is enter to the evaluation and packaged by wondershare quiz creator,

Direction button there is an icon that describe the function of the button, **Profile of developer button** enter the information profile of developer, and **Exit button** is close from the 3D-AP. The content on this media describe the learning material related with syllabus 2013 curriculum and learning objective based on KI/KD and indicator. Continued with quiz packed using Wondershare quiz creator. Display Slide 3D-AP dominated the globe move to suitable with the subject is Geography and the particle firework effect from 3D-AP.



Figure 4.2 The Content of Home Menu

3. KI-KD and Indicator Slide

In this slide explain about KI/KD and Indicator of learning Natural Disaster Mitigation and Adaptation material. There are several button icon **Kompetensi Inti** button to enter the core competence content, **Kompetensi Dasar** to enter the basic competence content and **Indikator** button to enter the indicators content.



Figure 4.3 The Menu of KI/KD



Figure 4.4 The Core Competence Content

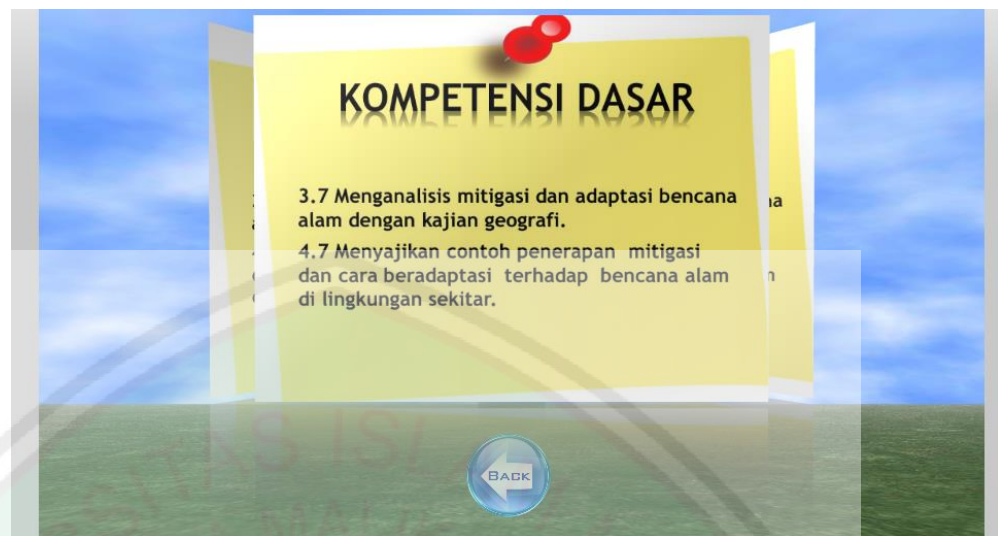


Figure 4.5 of the Basic Competence Content



Figure 4.6 The Indicator Content

4. Material Slide

In this slide explain in detail about the concept of mitigation and the effort to mitigation the natural disaster. The material presented include the definition of mitigation, concept of mitigation, kind of mitigation, natural disaster, Ayat Al-Qur'an, Video and the efforts of mitigation.



Figure 4.7 The Menu of Material

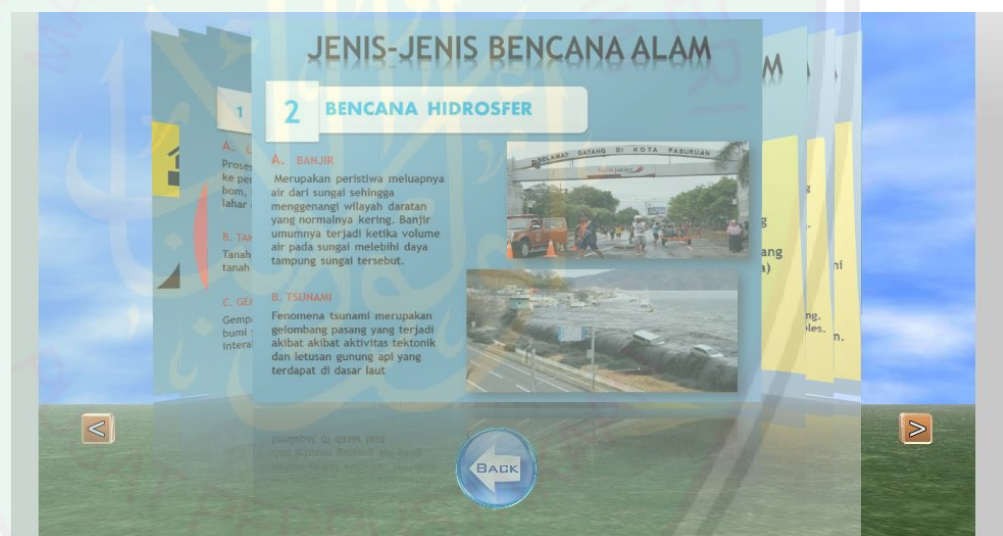


Figure 4.8 The Natural Disaster Material Content

5. Video Slide

In this slide showed about video animation related with material Natural Disaster Mitigation and Adaptation. There are five videos about disaster mitigation of flood, landslide, tsunami, earthquake, mountain eruption and what should we do.



Figure 4.9 Video of Flood Mitigation



Figure 4.10 Video of Landslide Mitigation



Figure 4.11 Video of Tsunami Mitigation



Figure of 4.12 Video of Earthquake Mitigation



Figure of 4.13 Video of Mountain Eruption Mitigation

6. Quiz Slide

This slide explain about the result after learning process. The shape about evaluation is Quiz Creator by Wondershare. The quiz evaluation there 10 questions of multiple choice.

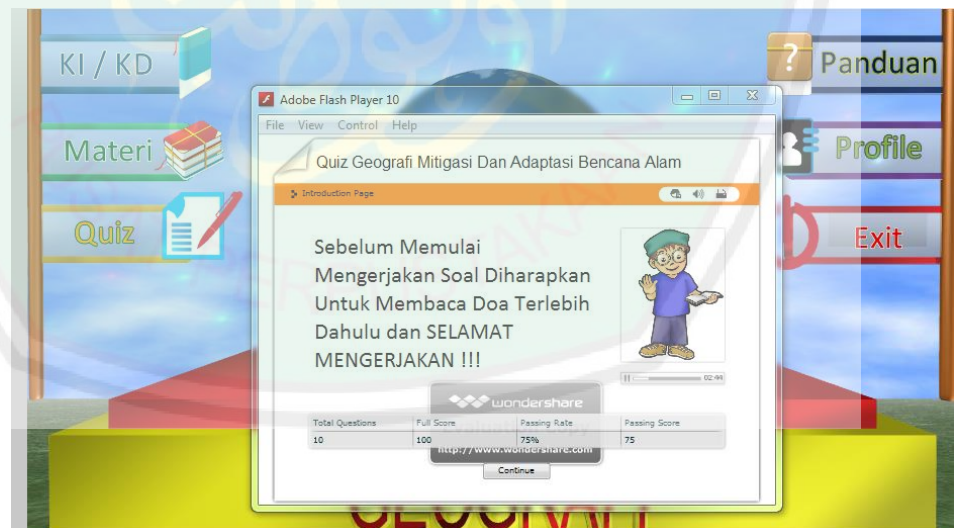


Figure 4.14 the Quiz Menu

E. Validation of Product

1. The Result of First Validation

Before trial the product the first validation by the validator experts on content material and design of media. Then do the revision of the product based on the assessment and suggestion from the validator by percentage are:

a. Validation of Content Material

Assessment result of Geography's lecture at State Islamic University of Malang on Development of 3D-AP Learning Media on Mitigation Disaster and Adaptation to Enhance the Learning Effectivity Students Tenth Grade at MAN Pasuruan as follows:

NO	ASPECT	INDICATOR	SCORE				
			1	2	3	4	5
1.	Format	1.Clarity of command in use of punctuation.			✓		
		2.The suitable of the content of the material				✓	
		3. The suitability between colors, images and format explanation materials.			✓		
2.	Content	1.The suitability of the material between the RPP and the Syllabus of geography "Natural Disaster Mitigation and Adaptation" with product competence.			✓		

		2.Related between KI-KD In the matter “Natural Disaster Mitigation and Adaptation”				✓	
		3.Related between KD with indicator geography learning “Natural Disaster Mitigation and Adaptation”				✓	
		4.Alignment of indicators and purpose of learning geography “Natural Disaster Mitigation and Adaptation”			✓		
		5.The depth of scope of the Geography of the material in the discussion of “Natural Disaster Mitigation and Adaptation”				✓	
		6.Clarity in the matter of the presence geography “Natural Disaster Mitigation and Adaptation”				✓	
		7.Concrete and abstract concept of truth on the matter “Natural Disaster Mitigation and Adaptation”				✓	
3.	Language	1.Use appropriate language with rule EYD				✓	
		2.The use of Vocabulary and Punctuation				✓	
		3.Completeness of Sentence/information easy to understand			✓		
4.	Evaluate	1.The suitability the content of the type of matter according to the material geography “Natural Disaster			✓		

	Mitigation and Adaptation”					
	2.Conformity in accordance with the material form of matter Geography “Natural Disaster Mitigation and Adaptation”			✓		

Table 4.1 First Content Material Validation Questioner

The evaluation of Geography Lecture at State Islamic University of Maulana Malik Ibrahim in the form of comment and suggestion repair the punctuation, word and sentence. The concept of material more completed for the concept of Mitigation Disaster and Adaptation. The suitable picture, add the map and the table of flood in the Pasuruan. For the lesson plan, repair the learning purpose and the steps of learning.

The percentage level of the assessment of teaching materials validator of content material using scale is as follows:

$$P = \frac{\sum x}{\sum x_1} \times 100\%$$

$$= \frac{53}{75} \times 100\%$$

$$= 70\%$$

Based on the Table of Qualification level feasibility criteria based on average, the percentage on 70% view on percentage 65%-75% have enough valid, need revision. But researcher need revision for the

made a product more efficient and better again. The revision from the suggested of validator to improve again the material is important on learning process.

b. Validator of Media Design

Assessment results of Media's lecture at State Islamic University of Malang on Development of 3D-AP Learning Media On Mitigation Disaster And Adaptation to Enhance the Learning Effectivity Students Tenth Grade at MAN Pasuruan as follows:

NO	ASPECT	INDICATOR	SCORE				
			1	2	3	4	5
1.	Form	1. Size of Alphabet on writing material				✓	
		2. Size of kind Alphabet			✓		
		3. Size on flipbook			✓		
		4. Button instruction description for use		✓			
2.	Design	1. Display opening on 3D-AP		✓			
		2. Suitability of color on every page on 3D-AP			✓		
		3. Compatibility of in the color combination on the 3D-AP				✓	
		4. Uses music instruction				✓	
		5. The Layout of 3D Aurora Interesting			✓		
3.	Content	1. Quiz creator suitable these of geography "Natural				✓	

		Disaster Mitigation and Adaptation”					
		2. Content of enrichment in suitable with the material geography “Natural Disaster Mitigation and Adaptation”			✓		
		3. Video animation in suitable with the material geography “Natural Disaster Mitigation and Adaptation”					
		4. Picture interesting suitable of geography “ Natural Disaster Mitigation and Adaptation”			✓		

Table4.2 First Media Validation Questioner

The evaluation is Learning media development lecture of tarbiyah and training teaching faculty, experts about the learning media development at State Islamic University of Maulana Malik Ibrahim Malang in the form of comment and suggestion first repair the direction navigation menu make more clearly with icons and the information, second the picture illustration must be used or have background with the around environment, third the size of flipbook must be suitable, fourth the layer must be deleted because it blocked the background, and the last the indicator must be pay attention with C1, C2, C3 and C4.

The percentage level of the assessment of teaching materials validator of content using scale is as follow:

$$\begin{aligned} P &= \frac{\sum x}{\sum x_1} \times 100\% \\ &= \frac{36}{65} \times 100\% \\ &= 55.38\% \end{aligned}$$

Based on the table of Qualification level feasibility criteria based on average table, the percentage rate of 55.38% and percentage 55-64% have a criteria less valid and need revision. So this media is not feasible so need revision. Comment and suggest from validator design media make a slide for button direction , to consideration made media be better and worth to be tasted.

2. The Result of Second Validation

The results of the products after revised the product, the process of validation by validator will be validating the content and media are:

a. Validation of Content Material

Assessment results of revised by Geography's lecture at State Islamic University of Malang on Development of 3D-AP Learning Media On Mitigation Disaster And Adaptation to Enhance the Learning Effectivity Students Tenth Grade at MAN Pasuruan as follows:

NO	ASPECT	INDICATOR	SCORE				
			1	2	3	4	5
1.	Format	1.Clarity of command in use of punctuation			✓		
		2.the suitable of the content of the material					✓
		3.The suitability between colors , images and format explanation materials.				✓	
2.	Content	1. The suitability of the material between the RPP and the Syllabus of geography “Natural Disaster Mitigation and Adaptation” with product competence.				✓	
		2.Related between KI-KD In the matter “Natural Disaster Mitigation and Adaptation”				✓	
		3.Related between KD with indicator geography learning “Natural Disaster Mitigation and Adaptation”					✓
		4.Alignment of indicators and purpose of learning geography “Natural Disaster Mitigation and Adaptation”			✓		
		5.The depth of scope of the Geography of the material in the discussion of “Natural Disaster Mitigation and Adaptation”					✓
		6.Clarity in the matter of the presence geography “Natural					✓

		Disaster Mitigation and Adaptation”					
		7.Concrete and abstract concept of truth on the matter “Natural Disaster Mitigation and Adaptation”				✓	
3.	Language	1.Use appropriate language with rule EYD				✓	
		2.The use of Vocabulary and Punctuation					✓
		3.Completeness of Sentence/information easy to understand				✓	
4.	Evaluate	1.The suitability the content of the type of matter according to the material geography “Natural Disaster Mitigation and Adaptation”				✓	
		2.Conformity in accordance with the material form of matter Geography “Natural Disaster Mitigation and Adaptation”				✓	

Table 4.3 Second Content Material Validation Questioner

The evaluation of Geography Lecture at State Islamic University of Maulana Malik Ibrahim in the form of advice and suggestions about interactive media based on 3D-AP Learning Media on Natural Disaster Mitigation and Adaptation for tenth grade students at MAN Pasuruan has been eligible to be tested.

The percentage level of the assessment of teaching materials validator of content material using scale is as follows:

$$\begin{aligned}
 P &= \frac{\sum x}{\sum x_1} \times 100\% \\
 &= \frac{63}{75} \times 100\% \\
 &= 84\%
 \end{aligned}$$

Based on the Table of Qualification level feasibility criteria based on average, the percentage on 70% view on percentages 75%-89% valid, no revision. Advice from validator of material is the concept of Mitigation more clearly and the types of evaluation can make from the easy, middle and difficult, before start the research must prepared the teaching technique and how to handle the class.

b. Validation of Media

Assessment results of Learning Media's Development lecture at State Islamic University of Malang on Development of 3D-AP Learning Media On Mitigation Disaster And Adaptation to Enhance the Learning Effectivity Students Tenth Grade at MAN Pasuruan as follows:

NO	ASPECT	INDICATOR	SCORE				
			1	2	3	4	5
1.	Form	1. Size on Alphabet writing material				✓	
		2. Size of kind Alphabet page 3D-AP					✓
		3. Size on flipbook				✓	
		4. Button instruction description for				✓	

		use					
2.	Design	1. Display opening on 3D-AP					✓
		2. Suitability of color on every page on 3D-AP				✓	✓
		3. Compatibility of in the color combination on the 3D-AP				✓	
		4. Uses music instruction					✓
3.	Content	1. Quiz creator suitable these of geography “Natural Disaster Mitigation and Adaptation”				✓	
		2. Content of enrichment in suitable with the material geography “Natural Disaster Mitigation and Adaptation”				✓	
		3. Video animation in suitable with the material geography “Natural Disaster Mitigation and Adaptation”				✓	
		4. Picture interesting suitable of geography “ Natural Disaster Mitigation and Adaptation”				✓	

Table 4.4 Second Media Validation Questioner

The evaluation of Learning Media Development Lecture at State Islamic University of Maulana Malik Ibrahim in the form of advice and suggestions about interactive media based on 3D-AP Learning Media on Natural Disaster Mitigation and Adaptation for tenth grade students at MAN Pasuruan has been eligible to be tested.

The percentage level of the assessment of materials validator of design and media using scale is as follows:

$$\begin{aligned}
 P &= \frac{\sum x}{\sum x_1} \times 100\% \\
 &= \frac{56}{65} \times 100\% \\
 &= 86.15\%
 \end{aligned}$$

Based on the Table of Qualification level feasibility criteria based on average, the percentage on 86% view on presents 75%-89% valid, no revision have a criteria good and no revision. So that does not need revised and can be tested on students at MAN Pasuruan. Advice from validator of design media, check the button on media, over all is good, and does need revision.

3. Validation of Product Before Trial test at MAN Kota Pasuruan

a) The result of the product at MAN Kota Pasuruan by Geography's Teacher

After validation the product by validator on State Islamic University Maulana Malik Ibrahim Malang. Before trial the product of 3D-AP learning media, the first is give the assessment by Geography's teacher as follows:

NO	ASPECT	INDICATOR	SCORE				
			1	2	3	4	5
1.	Design	1.Display opening on 3D-AP				✓	

		2. Suitability of color on every slide on 3D-AP				✓	
		3. Compatibility of in the color combination on 3D-AP				✓	
		4. Use Music Back sound				✓	
		5. the suitability between colors, images and format explanation materials					✓
2.	Material Content	1. The suitability of the material between lesson plan and syllabus of geography “ Natural Disaster Mitigation And Adaptation” with product competence.				✓	
		2. Have related between KI/KD in the matter “ Natural Disaster Mitigation And Adaptation”				✓	
		3. Suitability between KD with geography education indicators “ Natural Disaster Mitigation And Adaptation”				✓	
		4. Suitability between indicators and Objective learning geography “ Natural Disaster Mitigation And Adaptation”				✓	
		5. Depths the scope of material geography in the discussion “ Natural Disaster Mitigation And Adaptation”				✓	
		6. Clarity in the presentation material geography “ Natural Disaster Mitigation And Adaptation”				✓	

3.	Evaluation	1. Quiz Creator accordance with the materials geography “ Natural Disaster Mitigation And Adaptation”				✓	
		2. The suitability of the contents type of matter according to the material geography “ Natural Disaster Mitigation And Adaptation”					✓
		3. The suitability of according to the material form of matter geography “ Natural Disaster Mitigation And Adaptation”					✓
		4. Feasible used and tasted for geography lessons with matter “ Natural Disaster Mitigation And Adaptation”					✓

Table 4.5 Assessment from the Geography’s teacher at MAN

Pasuruan

The evaluation is Geography’s teacher at MAN Pasuruan, the suggestion and advice about the media 3D-AP is very good for the Natural Disaster Mitigation and Adaptation topic. But the media must be clearly the picture quality and the sound of media. Retained the media for development of media will be better and interest for teacher will be used the media.

The percentage level of the assessment of teaching materials validator of content using scale is as follow:

$$\begin{aligned}
 P &= \frac{\sum x}{\sum x_1} \times 100\% \\
 &= \frac{63}{75} \times 100\% \\
 &= 84\%
 \end{aligned}$$

Based on the table of Qualification level feasibility criteria based on average table, the percentage rate of 84% percentage 75% - 89% have a criteria good and no revision. So that conduct the research about effectiveness learning using 3D-AP.

F. The Result of Test

After conducting several of validation and revised to the product as feasible, researcher trial test the product 3D-AP on Natural Disaster Mitigation topic. The results are pretest and posttest of student Tenth Grade at MAN Kota Pasuruan as follow:

NO	INDUK	NAME	L/P	PRETEST	POSTEST
1	9029	ACHMAD ARIS	L	55	80
2	9058	ANJUMUZ ZUHRIYAH	P	75	90
3	9060	A'YUNIL ZANNAH	P	75	70
4	9065	AZIZAH	P	75	80
5	9066	BAHRUL ULUM	L	-	-
6	9074	CHOIROTUNNISA	P	50	85
7	9076	CHURIMATUL HABIBA	P	95	75
8	9076	DEWI KHILMIAH	P	65	85
9	9080	DEWI RASAH	P	75	90
10	9091	DINA FITRIANA	P	65	90

11	9093	DISTIA EKA SAFITRI	P	75	85
12	9103	FARA BALQIS	P	75	95
13	9109	FERRY SYANUFIUDIN	L	70	80
14	9123	IBNU FARIMUS KHOLIK	L	60	80
15	9140	KHORUL NISA	P	55	85
16	9142	LAILATUL FARIHKA	P	80	85
17	9151	M. ARDIANTO	L	85	95
18	9166	M.ISMAIL PRAMUDA WARDANI	L	75	80
19	9171	M.NANANG IRFANTO	L	50	80
20	9174	M.RIO FEBRIANSYAH	L	75	80
21	9176	M.RISKY YUSA MAULANA	L	55	85
22	9177	MUCHAMMAD RIFQIH	L	65	80
23	9201	MUHAMMAD AJI PANGESTU	L	66	85
24	9205	MUHAMMAD RAFI MAULANA	L	80	90
25	9214	NADIA KHOIRINA	P	60	90
26	9228	NIKEN RETNONINGRUM W	P	55	85
27	9233	NUR FAUZIA	P	60	85
28	9238	NURIN KHILMIYAH	P	85	90
29	9242	NURUL KHAFIDAH	P	60	90
30	9244	RIA UUN SUPRIANI	P	75	90
31	9252	RIFDATUL MUAWANA	P	50	80
32	9255	RIZKA FAUZIA	P	80	90
33	9259	SHAVILLA AYU VENANZYA	P	85	80
34	9269	WAKHIDIN	L	-	-
35	9293	ARIEL PUTRA RAMADHAN	L	75	80
36	9060	KHARIS FIRMAN KHOLIK	L	80	85
TOTAL				2361	2880
MEAN				69.44	84,71

**Table 4.6 The value of Pre-test and Post-Test X-IPS Grade at
MAN Pasuruan**

1. Making Ha and Ho in Sentence

The purpose of the T-test two variables is to help compared weather both variables are the same or different. The purpose of the T-test significance of research results, the measure is in the form of comparison of the two sample average.³⁸ Before calculate the T-test the first stage is made Hypothesis, on statistic there are 2 kind of Hypothesis that is alternative hypothesis (Ha) and zero hypothesis (Ho). So that from this sentence follows are:

- Ha : There is difference significant before using 3D-AP learning media with after using 3D-AP learning media on tenth grade student at MAN Pasuruan.
- Ho : There is no difference significant between before using 3D-AP learning media with after using 3D-AP learning media on tenth grade student at MAN Pasuruan.

2. Making Ha and Ho in Statistic

- Ha : $\mu_1 \neq \mu_2$
- Ho : $\mu_1 = \mu_2$

³⁸Drs. Ridwan, M.BA dan Drs. H. Sunarto. *Pengantar Statistika Untuk Penelitian Pendidikan Sosial, Ekonomi, Komunikasi dan Bisnis*. Bandung: Alfabeta. Page.126

3. Making the Table of Count

In this stage, made a table of count from the result of before using 3D-AP learning media (pre-test) and after using 3D-AP learning media (post-test) as follows:

a. Pre Test

No	Induk	Name	L /P	Pre Test	Mean	PR-T	(PR-T) ²
1	9029	ACHMAD ARIS	L	55	69,44	14,44	208,5136
2	9058	ANJUMUZ ZUHRIYAH	P	75	69,44	-5,56	30,9136
3	9060	A'YUNIL ZANNAH	P	75	69,44	-5,56	30,9136
4	9065	AZIZAH	P	75	69,44	-5,56	30,9136
5	9066	BAHRUL ULUM		-	-	-	
6	9074	CHOIROTUNNISA	P	50	69,44	19,44	377,9136
7	9076	CHURIMATUL HABIBA	P	95	69,44	-25,56	653,3136
8	9076	DEWI KHUMILAH	P	65	69,44	4,44	19,7136
9	9080	DEWI RASAH	P	75	69,44	-5,56	30,9136
10	9091	DINA FITRIANA	P	65	69,44	4,44	19,7136
11	9093	DISTIA EKA SAFITRI	P	75	69,44	-5,56	30,9136
12	9103	FARA BALQIS	P	75	69,44	-5,56	30,9136
13	9109	FERRY SYANUFIUDIN	L	70	69,44	-0,56	0,3136
14	9123	IBNU FARIMUS KHOLIK	L	60	69,44	9,44	89,1136
15	9140	KHORUL NISA	P	55	69,44	14,44	208,5136
16	9142	LAILATUL FARIHKA	P	80	69,44	-10,56	111,5136
17	9151	M. ARDIANTO	L	85	69,44	-15,56	242,1136
18	9166	M.ISMAIL PRAMUDA W.	L	75	69,44	-5,56	30,9136
19	9171	M.NANANG IRFANTO	L	50	69,44	19,44	377,9136
20	9174	M.RIO FEBRIANSYAH	L	75	69,44	-5,56	30,9136
21	9176	M.RISKY YUSA M.	L	55	69,44	14,44	208,5136

22	9177	MUCHAMMAD RIFQIH	L	65	69,44	4,44	19,7136
23	9201	MUHAMMAD AJI P.	L	66	69,44	3,44	11,8336
24	9205	MUHAMMAD RAFI M.	L	80	69,44	-10,56	111,5136
25	9214	NADIA KHOIRINA	P	60	69,44	9,44	89,1136
26	9228	NIKEN RETNONINGRUM	P	55	69,44	14,44	208,5136
27	9233	NUR FAUZIA	P	60	69,44	9,44	89,1136
28	9238	NURIN KHILMIYAH	P	85	69,44	-15,56	242,1136
29	9242	NURUL KHAFIDAH	P	60	69,44	9,44	89,1136
30	9244	RIA UUN SUPRIANI	P	75	69,44	-5,56	30,9136
31	9252	RIFDATUL MUAWANA	P	50	69,44	19,44	377,9136
32	9255	RIZKA FAUZIA	P	80	69,44	-10,56	111,5136
33	9259	SHAVILLA AYU V.	P	85	69,44	-15,56	242,1136
34	9269	WAKHIDIN		-	-	-	
35	9293	ARIEL PUTRA RAMADHAN	L	75	69,44	-5,56	30,9136
36	9060	KHARIS FIRMAN KHOLIK	L	80	69,44	-10,56	111,5136

Table 4.7 The T-table value of Pre-Test X-IPS Grade at

MAN Pasuruan

$$\begin{aligned}
 \Sigma (PT-M)^2 &= 5251,247 \\
 &= \frac{5251,247}{34} \\
 &= 137,284 \text{ (varian)} \\
 &= \sqrt{137,284} \\
 &= 11,717 \text{ (standard deviasi)}
 \end{aligned}$$

b. Post Test

No	Induk	Name	L/P	Post Test	Mean	PR-T	(PR-T) ²
1	9029	ACHMAD ARIS	L	80	84,71	4,7	22,09
2	9058	ANJUMUZ ZUHRIYAH	P	90	84,71	-5,3	28,09
3	9060	A'YUNIL ZANNAH	P	70	84,71	14,7	216,09
4	9065	AZIZAH	P	80	84,71	4,7	22,09
5	9066	BAHRUL ULUM	L	-			
6	9074	CHOIROTUNNISA	P	85	84,71	-0,3	0,09
7	9076	CHURIMATUL HABIBA	P	75	84,71	9,7	94,09
8	9076	DEWI KHILMIAH	P	85	84,71	-0,3	0,09
9	9080	DEWI RASAH	P	90	84,71	-5,3	28,09
10	9091	DINA FITRIANA	P	90	84,71	-5,3	28,09
11	9093	DISTIA EKA SAFITRI	P	85	84,71	-0,3	0,09
12	9103	FARA BALQIS	P	95	84,71	-10,3	106,09
13	9109	FERRY SYANUFIUDIN	L	80	84,71	4,7	22,09
14	9123	IBNU FARIMUS KHOLIK	L	80	84,71	4,7	22,09
15	9140	KHORUL NISA	P	85	84,71	-0,3	0,09
16	9142	LAILATUL FARIHKA	P	85	84,71	-0,3	0,09
17	9151	M. ARDIANTO	L	95	84,71	-9,5	106,09
18	9166	M.ISMAIL PRAMUDA W.	L	80	84,71	4,7	22,09
19	9171	M.NANANG IRFANTO	L	80	84,71	4,7	22,09
20	9174	M.RIO FEBRIANSYAH	L	80	84,71	4,7	22,09
21	9176	M.RISKY YUSA M.	L	85	84,71	-0,3	0,09
22	9177	MUCHAMMAD RIFQIH	L	80	84,71	4,7	22,09
23	9201	MUHAMMAD AJI P.	L	85	84,71	-0,3	0,09
24	9205	MUHAMMAD RAFI M.	L	90	84,71	-5,3	28,09
25	9214	NADIA KHOIRINA	P	90	84,71	-5,3	28,09
26	9228	NIKEN RETNONINGRUM	P	85	84,71	-0,3	0,09
27	9233	NUR FAUZIA	P	85	84,71	-0,3	0,09

28	9238	NURIN KHILMIYAH	P	90	84,71	-5,3	28,09
29	9242	NURUL KHAFIDAH	P	90	84,71	-5,3	28,09
30	9244	RIA UUN SUPRIANI	P	90	84,71	-5,3	28,09
31	9252	RIFDATUL MUAWANA	P	80	84,71	4,7	22,09
32	9255	RIZKA FAUZIA	P	90	84,71	-5,3	28,09
33	9259	SHAVILLA AYU V.	P	80	84,71	4,7	22,09
34	9269	WAKHIDIN	L	-			
35	9293	ARIEL PUTRA RAMADHAN	L	80	84,71	4,7	22,09
36	9060	KHARIS FIRMAN KHOLIK	L	85	84,71	-0,3	0,09

**Table 4.8 The T-table value of Post-Test X-IPS Grade at
MAN Kota Pasuruan**

$$\begin{aligned}
 \Sigma (PT-M)^2 &= 7813702 \\
 &= \frac{7813702}{34} \\
 &= 30,214 \text{ (varian)} \\
 &= \sqrt{30,214} \\
 &= 5,555 \text{ (standartdeviasi)}
 \end{aligned}$$

4. Finding Mean, Standard deviasi, Varian's and Correlation

a. Mean x_1

$$x = \frac{\Sigma x_i}{n}$$

$$= \frac{2361}{34}$$

$$= 69,44$$

Mean x_2

$$x = \frac{\sum x_i}{n}$$

$$= \frac{2880}{34}$$

$$= 84,71$$

b. Standard Deviasi Pretest

$$S = \sqrt{\frac{\sum (x_i - x)^2}{(n-1)}}$$

$$= \sqrt{\frac{5251,247}{33}}$$

$$= \sqrt{137,284}$$

$$= 11,717$$

Standard Deviasi Posttest

$$S = \sqrt{\frac{\sum (x_i - x)^2}{(n-1)}}$$

$$= \sqrt{\frac{7813702}{33}}$$

$$= \sqrt{30,214}$$

$$= 5,555$$

c. Varian's Pretest

$$\alpha = \frac{\sum (xi-x)^2}{(n-1)}$$

$$= \frac{5251.247}{33}$$

$$= 137,284$$

Varian's Posttest

$$\alpha = \frac{\sum (xi-x)^2}{(n-1)}$$

$$= \frac{7813702}{33}$$

$$= 30,214$$

d. Correlation

For the corelation showed Tabel of Product moment about the Significant 5% with N = 34 is 0,339

5. Finding t_{hitung} by formula

$$t = \frac{x_1 - x_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

$$= \frac{84,71 - 69,44}{\sqrt{\frac{(11,717)^2}{34} + \frac{(5,555)^2}{34}}}$$

$$= \frac{15,27}{\sqrt{\frac{137,288089}{34} + \frac{30,217009}{34}}}$$

$$= \frac{15,27}{\sqrt{\frac{167,505098}{34}}}$$

$$= \frac{15,27}{\sqrt{4,037886142883}}$$

$$= \frac{15,27}{2,0094492138103}$$

$$= 7,59$$

6. Finding the Test Way

Significant level : ($\alpha = 0,05$)

$$\begin{aligned} \text{t-tabel} \quad : \text{dk} &= n_1 + n_2 - 2 \\ &= 34 + 34 - 2 \\ &= 66 \end{aligned}$$

$$\text{t-tabel} = 1,99656$$

7. Compare t_{tabel} with t_{hitung}

Evidently $t_{\text{hitung}} \geq t_{\text{tabel}} \geq$

Or $7,59 \geq 1,99656$, So on H_a accepted and H_o rejected.

8. Conclusion

H_a : There is difference significant before using 3D-AP learning media with after using 3D-AP learning media on tenth grade student at MAN Pasuruan is accepted.

Meanwhile H_o : There is no difference significant between before using 3D-AP learning media with after using 3D-AP learning media on tenth grade student at MAN Pasuruan is rejected.

So that, compare about the effectiveness of 3D-AP learning media, view on the result test of students.

G. Analysis Data of 3D Aurora Presentation

The revised and result the product by validation material and design for 3D-AP learning media on natural disaster mitigation and adaptation are two cycle validation the first validation and second validation. The describe of data analysis as follow:

1. The Data Analysis Validation of Material

a) First validation

- 1) Format aspect, on aspect of the material according to expert material the score is low because of the image is less interest and not suitable with the material, then the punctuation is good but the concept of the material is not clearly and not connection with the several materials. The obtaining score of material is:

$$\begin{aligned} P &= \frac{\sum x}{\sum x_1} \times 100\% \\ &= \frac{10}{15} \times 100\% \\ &= 66,6\% \end{aligned}$$

Based on the score 66.6% is need to revision to make the media more interest and clearly.

- 2) Content aspect, have a content of the suitability learning material in the media with the syllabus and RPP of geography natural disaster mitigation and adaptation. According to the validator material experts the suitability of the material with the syllabus and RPP geography is very less. The obtaining a score is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{26}{35} \times 100\% \\
 &= 74,2\%
 \end{aligned}$$

The score for the content aspect is 74,2% enough but need to revision to clearly the concept material of natural disaster mitigation and adaptation suitable with the syllabus and RPP Geography.

- 3) Language aspect, have a content the rule of language uses suitable with EYD, and the clearly of direction word. The obtaining of language score is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{11}{15} \times 100\% \\
 &= 73,3\%
 \end{aligned}$$

From the material experts the correction is the language uses must be suitable with EYD, repair the direction words and find the typo words in the material. So overall is need to revision for the language aspect.

- 4) Evaluation aspect, the form of the evaluation in the media is reserved form quiz creator. For the suitability of the question with the material is less, and the kind of questions is must be develop. The obtaining score of evaluation aspect is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{6}{10} \times 100\% \\
 &= 60\%
 \end{aligned}$$

Based on the evaluation score is 60% so need to revision for the product to make more effective.

The overall value assessment of the first material content validation as follow:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{53}{75} \times 100\% \\
 &= 70\%
 \end{aligned}$$

b) Second validation

- 1) Format aspect, after the revision, the clarity of the concept material and the suitability the image with the material is good.

The obtaining the score is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{12}{15} \times 100\% \\
 &= 80\%
 \end{aligned}$$

Based on the format aspect score is 80%, meaning that the 3D-AP is good and deserve to be tested.

- 2) Content Aspect, after the revision the suitability learning material in the media with the syllabus and RPP of geography natural disaster mitigation and adaptation is good and get obtaining score is:

$$\begin{aligned} P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\ &= \frac{30}{35} \times 100\% \\ &= 85,71\% \end{aligned}$$

Based on the language aspect score is 86,6%, meaning that the 3D-AP is good don't need revision and deserve to be tested.

- 3) Language aspect, after the revision the rule of language using EYD, and the clearly of the direction words is good and obtaining score is:

$$\begin{aligned} P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\ &= \frac{13}{15} \times 100\% \\ &= 86,61\% \end{aligned}$$

Based on the language aspect score is 86,6%, meaning that the 3D-AP is good and deserve to be tested.

- 4) Evaluation, after the revision the suitability of the question with the material is good, for obtaining score is:

$$\begin{aligned} P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\ &= \frac{8}{10} \times 100\% \\ &= 80\% \end{aligned}$$

Based on the language aspect score is 80%, meaning that the 3D-AP is good don't need revision and deserve to be tested. The overall value assessment of second validation of material is:

$$\begin{aligned} P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\ &= \frac{63}{75} \times 100\% \\ &= 84\% \end{aligned}$$

2. The validation of media

a) First Validation

- 1) Form aspect, the suggestion from media experts need the clarity of the instruction button, must be need the direction represented by the icon button and the size of words in the media is small the user of media cannot clearly to see. For obtaining form aspect is:

$$\begin{aligned} P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\ &= \frac{12}{20} \times 100\% \\ &= 60\% \end{aligned}$$

Based on the form aspect get score 60% is less and need to revision for media.

- 2) Design aspect, the display of the welcome slide is over and blocking the background slide, so need to make more simply.

For obtaining a score of design aspect is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{14}{25} \times 100\% \\
 &= 56\%
 \end{aligned}$$

From the design aspect get score 60% is very less and need to revision to improve the design media.

- 3) Content aspect, the suggestion from the media expert validation is the size video of media must proportional and the picture can change with the others picture that relevant with material. For obtaining the score of content aspect is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{13}{20} \times 100\% \\
 &= 65\%
 \end{aligned}$$

The score of content aspect is 65%, need to revision to media.

The overall value assessment of the first validation media is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{36}{65} \times 100\% \\
 &= 55,38\%
 \end{aligned}$$

b) Second Validation

- 1) Form aspect, the clarity of the instruction button and the size of words in the media is good. For obtaining score of form aspect is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{17}{20} \times 100\% \\
 &= 85\%
 \end{aligned}$$

For the form aspect score is 84% is good no revision means that the 3D-AP learning media already deserved to be tested.

- 2) Design aspect the display of welcome slide is over and blocking the background slide is good and simple. For obtaining score of design aspect is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{23}{25} \times 100\% \\
 &= 92\%
 \end{aligned}$$

For the form aspect score is 94% is very good no revision means that the 3D-AP learning media already deserved to be tested.

- 3) Content aspect, the size video of media is good and the picture is relevant with material. For obtaining score of content aspect is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{16}{20} \times 100\% \\
 &= 80\%
 \end{aligned}$$

For the form aspect score is 80% is good no revision means that the 3D-AP learning media already deserved to be tested.

The overall of assessment value the second media validation is:

$$\begin{aligned}
 P &= \frac{\Sigma x}{\Sigma x_1} \times 100\% \\
 &= \frac{56}{65} \times 100\% \\
 &= 86,5\%
 \end{aligned}$$

H. Product Revision

From validation questioner result explain that 3D-AP learning media on natural disaster mitigation and adaptation topic is valid. But from validation questioner there is revision about 3D-AP such as:

1. Product Revision from Media Experts

4.9 Table of Product Revision from Media Experts

Before Revision	After Revision
	





2. Product Revision from Content Material Experts

4.10 Table of Product Revision from Content Material Experts

Before Revision	After Revision



I. The Effectiveness of 3D-AP Learning media

The effectiveness of the 3D-AP learning media for learning process requires some aspects as a constituent. Effective learning also has principles include:

- 1) Measure the previous knowledge belonging to the student.
- 2) Consideration individual differences.
- 3) Stated the purpose.
- 4) Involved student in relevant practice.³⁹

³⁹Sharon. E. Smaldino dkk, *Instructional Techonology & Media for Learning* (Jakarta ; kencana, 2011) page.22

The effectiveness of these learning media use also requires active students in the learning process. On the research that has been done by researcher in MAN Pasuruan since on 15th and 22nd April 2017 looks that the class condition is conducive and look so enthusiasm to get the lesson and the new experience learning. To know the whether the media is effective or not, before learning activity in the first meeting on April 15th 2017 the students given pre-test to find how the capability of the students before using media 3D-AP on the natural disaster mitigation and adaptation, pre-test doing by individual. Then the second meeting on April 22nd 2017 is the demonstrated of geography learning media 3D-AP and post-test done by individual and the end.

The results of pre-test and post-test are as follow:

NO	INDUK	NAME	L/P	PRETEST	POSTEST
1	9029	ACHMAD ARIS	L	55	80
2	9058	ANJUMUZ ZUHRIYAH	P	75	90
3	9060	A'YUNIL ZANNAH	P	75	70
4	9065	AZIZAH	P	75	80
5	9066	BAHRUL ULUM	L	-	-
6	9074	CHOIROTUNNISA	P	50	85
7	9076	CHURIMATUL HABIBA	P	95	75
8	9076	DEWI KHILMIAH	P	65	85
9	9080	DEWI RASAH	P	75	90
10	9091	DINA FITRIANA	P	65	90
11	9093	DISTIA EKA SAFITRI	P	75	85
12	9103	FARA BALQIS	P	75	95
13	9109	FERRY SYANUFIUDIN	L	70	80

14	9123	IBNU FARIMUS KHOLIK	L	60	80
15	9140	KHORUL NISA	P	55	85
16	9142	LAILATUL FARIHKA	P	80	85
17	9151	M. ARDIANTO	L	85	95
18	9166	M.ISMAIL PRAMUDA WARDANI	L	75	80
19	9171	M.NANANG IRFANTO	L	50	80
20	9174	M.RIO FEBRIANSYAH	L	75	80
21	9176	M.RISKY YUSA MAULANA	L	55	85
22	9177	MUCHAMMAD RIFQIH	L	65	80
23	9201	MUHAMMAD AJI PANGESTU	L	66	85
24	9205	MUHAMMAD RAFI MAULANA	L	80	90
25	9214	NADIA KHOIRINA	P	60	90
26	9228	NIKEN RETNONINGRUM W	P	55	85
27	9233	NUR FAUZIA	P	60	85
28	9238	NURIN KHILMIYAH	P	85	90
29	9242	NURUL KHAFIDAH	P	60	90
30	9244	RIA UUN SUPRIANI	P	75	90
31	9252	RIFDATUL MUAWANA	P	50	80
32	9255	RIZKA FAUZIA	P	80	90
33	9259	SHAVILLA AYU VENANZYA	P	85	80
34	9269	WAKHIDIN	L	-	-
35	9293	ARIEL PUTRA RAMADHAN	L	75	80
36	9060	KHARIS FIRMAN KHOLIK	L	80	85
TOTAL				2361	2880
MEAN				69,44	84,71

4.11 Table value pretest and posttest of student

Based on table of value of Pre-test and Post-test, before using learning media 3D-AP the student value mean is low is 69,44. then after using the learning media 3D-AP the student value mean is 84,71. So that the

media will be effective for uses. The result of significant difference as $t_{hitung} \geq t_{tabel} \geq$ Or $7,59 \geq 1,99656$, So on H_a accepted and H_o rejected.

In conclusion, then H_o rejected and H_a accepted. So there is a significant difference before and after using 3D-AP. With the pre-test and post-test result that concluded that 3D-AP is effective and valid to use in learning activities.



CHAPTER V

CLOCLUSION

In this last chapter discuss about A) Conclusion, B) Recommendation, as follow:

A. Conclusion

1. The Conclusion about the characteristic of 3D Aurora Presentation learning media

The Characteristic of 3D-AP geography learning media on natural disaster mitigation and adaptation for tenth grade students at MAN Pasuruan there are components in the learning media as follow:

- a. Cover

Cover is the first slide in the 3D-AP learning media on natural disaster mitigation and adaptation is have a form the slide title of the 3D-AP learning media, in this slide display the identity of the school and the subject of the media and have a button Play to enter to home menu media.

- b. Home Menu

The main slide of the media and has a several menu can be uses includes KI/KD button, Material button, Quiz button, Direction button, Profile of Developer button, and Exit button.

c. KI/ KD

In this slide there are has a content about core competence, basic competence and the indicator that student must be reached in the natural disaster mitigation and adaptation material.

d. Material

This slide describe about the main material of mitigation and natural disasters mitigation. The material is the concept of natural disaster, concept of mitigation and the steps of mitigation.

e. Quiz

This menu have a content about evaluation with 10 questions multiple choice and packed by Wondershare quiz creator.

f. Video

This slide menu have a several animation video about natural disasters mitigation, so the video not boring and interesting the student with the video animation displays.

g. Direction

This menu have a content of the direction button in the media, there are several button can be used in the media, so this menu is can help and make easy to use the media.

h. Profile of Developer

This menu display about the profile information about the developer the media.

i. Exit

This menu is the button to close or exit the media.

2. The Conclusion about the Process of Development 3D Aurora Presentation learning media

The process development of 3D-AP learning media is adapted from Dick and Carrey procedure development, there are fifth steps development procedure first is learning analyze, identify learning objective, design product stage, validation and evaluation, and the last is summative evaluation stage.

The 3D-AP process of development 3D-AP learning media the first steps is researcher analyze the geography process in the MAN Pasuruan conducted with observation and interview with the geography's teacher. Next is determining the learning material based on KI/KD and indicators. After this researcher create and design media based on 3D Aurora Presentation and validation by media design and content material expert. The last steps is summative evaluation stage, after the media has validation and revision from the validator expert the media is already deserved to be tested in student at MAN Pasuruan. In this stage is comparing the result study of the student before and after using 3D-AP learning media to view the effect result study of study of learning outcomes by using 3D-AP. The test divide into two test pre-test and post-test by individual student test.

Based on the student result test, that 3D-AP learning media is proven to enhance the learning effectivity on natural disaster mitigation and adaptation for tenth grade students at MAN Pasuruan. The significant of the test showed that mean value of Pre-test and Post-test is different, before using learning media 3D-AP the student value mean is low is 69,44 then after using the learning media 3D-AP the student value mean is 84,71. So that the media will be effective for uses. The result of significant difference as $t_{hitung} \geq t_{tabel} \geq$ Or $7,59 \geq 1,99656$, So on H_a accepted and H_o rejected, means there is a significant difference before and after using 3D-AP. With the pre-test and post-test result that concluded that 3D-AP is effective and valid to use in learning activities.

3. The Conclusion of the validity 3D Aurora Presentation learning media
3D-AP learning media that has develop get a good qualification, based on the validation of the first validation of learning material with a percentages of 70%, in the second validation the percentage of the learning material is 84% mean is good no revision and ready to be tested. As for media design the first validation have percentage of 55,38% this percentages is very less and need to revision, after revision in the second validation media design gave a percentage 86,5% is good and the 3D-AP learning media worth to be tested.

B. Recommendation

The 3D-AP learning media that have been developing are expected to support and enhance learning effectivity of geography subject in particular of tenth IPS grade students. There are suggestions of the 3D-AP learning media such follow:

1. For Product Utilization

Based on the result of subject trial so the effort to optimize the utilization of the 3D-AP learning media as follow:

- a) For the Teacher hopefully capable to apply the 3D-AP learning media so that can utilized in presenting the subject matter with, supported by some equipment need to be prepared as operating the media like LCD Projector.
- b) For the school should the used of interactive learning media more often and also the completing the learning facilitate for students in the enriched science with the in interactive learning media, others programs and design media.

2. For Dissemination of Product

For the purposes of further development suggested the following:

- a) This product development is limited to the natural disaster mitigation and adaptation material, therefore need for further development in others material and more comprehension.

- b) 3D-AP learning media can be used as a reference by the teacher to develop the media based on the students' needs and learning analyze.



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January 2017





KEMENTERIAN AGAMA REPUBLIK INDONESIA
KANTOR KOTA PASURUAN
Jalan Panglima Sudirman No. 75 Telp./Fax. 0343-424883

Nomor : B-*686* Kk.13.27/PP.00.5/3/2017 27 Maret 2017
Sifat : Penting
Lampiran : -
Hal : **Ijin Penelitian**

Kepada Yth. Kepala MAN Kota Pasuruan
Di, Pasuruan

Memperhatikan Surat dari UIN Maulana Malik Ibrahim Nomor : Un.3.1/TL.00.1/440/ 2017
tentang Pengajuan Ijin Penelitian Di Madrasah Aliyah Negeri Kota Pasuruan.

maka kami yang bertanda tangan di bawah ini :

Nama : Drs. H. MA'MUR SALIM, M.Si.
NIP : 19590504 198903 1 002
Jabatan : Kepala Kantor Kemenag Kota Pasuruan
Instansi : Kantor Kemenag Kota Pasuruan

Memberikan Ijin kepada :

Nama : Ana Firdiansyah
NIM : 13130085
Jurusan : Pendidikan Ilmu Pengetahuan Sosial (PIPS)
Fakultas : Ilmu Tarbiyah dan Keguruan UIN Maulana Malik Ibrahim Malang
Judul Skripsi : Devloping 3D Aurora Presentasin Learning Media on Natural
Disaster Mitigation and Adaption to enhance the learning
affectivity for tenth Grade students at MAN kota Pasuruan

Untuk Melakukan Penelitian Tugas Akhir yang akan dimulai pada Tanggal **17 April 2017 - selesai**

Demikian surat ini kami buat agar dapat dipergunakan sebagaimana mestinya.

Kepala,

MA'MUR SALIM



KEMENTERIAN AGAMA REPUBLIK INDONESIA
KANTOR KEMENTERIAN AGAMA KOTA PASURUAN
MADRASAH ALIYAH NEGERI KOTA PASURUAN
Jalan Erlangga Wironini telp. (0343) 426841 Pasuruan 67115
Jalan Dr. Wahidin Sudiro Husodo 59 tlp-fax (0343) 421290 Pasuruan 67126
Email : manpasuruan@gmail.com

Nomor : 304 /Ma.13.27.1/PP.00.6/ 04 /2017
Lamp : --
Hal : **Ijin Penelitian**

25 April 2017

Kepada

Yth. Ketua UIN Maulana Malik Ibrahim Malang

Di
Tempat

Assalamu'alaikum Wr. Wb.

Menindak lanjuti surat dari UIN Maulana Malik Ibrahim Malang Nomor : Un.3.1/TL.00.1/440/2017 tanggal 16 Maret 2017 tentang Permohonan Izin Mengadakan Penelitian, dengan ini kami tidak keberatan dan memberikan izin Penelitian pada tanggal 15-22 April 2017 atas nama :

Nama : ANA FIRDIANSYAH
Tempat/Tanggal lahir : Sidoarjo, 20 Januari 1995
NIM : 13130085
Program Studi : Pendidikan Ilmu Pengetahuan social (PIPS)

Demikian atas perhatian dan kerjasamanya disampaikan terima kasih.

Wassalamu'alaikum Wr. Wb



Kepala
Drs. ACHMAD BARIK MARZUQ, M.Pd
NIP. 196606271994031002

Soal Pretest

Geografi –Mitigasi dan Adaptasi Bencana Alam

Nama : M. RIZKY YUSA M.
 Kelas : X IPS 1
 No. Absen : 23

Nilai : 55

A. Pilihlah jawaban yang paling tepat dengan memberikan tanda silang (x) pada huruf a,b,c atau d pada lembar jawaban yang tersedia!

1. Perhatikan jenis-jenis bencana berikut ini!
 (1) Gempa bumi
 (2) Konflik Masyarakat
 (3) Kekeringan
 (4) Angin Topan
 (5) Wabah Penyakit
 (6) Tanah longsor
 Berikut yang termasuk bencana alam ditunjukkan pada nomor...
 a. (1) dan (2)
 b. (1) (2) dan (3)
 c. (2) (3) dan (4)
 d. (3) (2) dan (6)
2. Perhatikan jenis-jenis bencana berikut ini.
 (1) Kekeringan (2) Pemanasan Global
 (2) Badai Tropis
 Jenis bencana tersebut termasuk jenis bencana.....
 a. Sosial
 b. Umum
 c. Lokal
 d. Meteorologi
3. Rusaknya bangunan putusnya akses Jalan serta timbulnya korban meninggal Dan luka-luka merupakan dampak gempa bumi secara...
 a. Tidak Langsung
 b. Primer
 c. Sekunder
 d. Langsung
4. Tujuan utama dari Mitigasi bencana adalah...
 a. Mengurangi kerusakan alam yang mungkin terjadi.
 b. Meminimalkan kerusakan infrastruktur
 c. Menghindari kepunahan satwa langka
 d. Meminimalkan korban jiwa dan kerusakan harta benda
5. Upaya nyata yang dapat dilakukan untuk mencegah kemungkinan terjadinya banjir adalah...
 a. Memperluas pembangunan
 b. Mengeluarkan peraturan Pemerintah mengenai ijin pembangunan
 c. Membangun rumah dengan fondasi yang tinggi
 d. Tidak membuang sampah ke sungai.

6. Tindakan apa yang harus dilakukan saat banjir?
- Mentaikan aliran listrik di dalam rumah
 - Secepatnya membersihkan rumah
 - Penataan daerah aliran sungai secara terpadu
 - Tidak membuang sampah ke sungai
7. Perhatikan pernyataan dibawah ini dengan baik!
- Tidak membuang sampah/limbah padat ke sungai, saluran dan sistem drainase.
 - Tidak tinggal didaerah bantaran sungai
 - Menghentikan penggundulan hutan.
 - Ikut serta dalam kegiatan latihan-latihan upaya mitigasi bencana.
- Berikut yang termasuk aspek penyebab banjir, kecuali...
- (1)
 - (2)
 - (3)
 - (4)
8. Berikut yang termasuk ke dalam kegiatan mitigasi bencana adalah...
- Perencanaan partisipatif penanggulangan bencana
 - Mengurangi resiko dampak yang ditimbulkan oleh bencana khususnya bagi penduduk.
 - Penataan daerah aliran sungai secara terpadu.
 - Mengadakan gotongroyong membersihkan drainase.
9. Perhatikan pernyataan di bawah ini dengan benar!
- Pembentukan kelompok kerja (pokja)
 - Memonitor dan mengevaluasi data curah hujan, banjir, daerah genang dan informasi lain.
 - Menyiapkan daerah peta rawan banjir dilengkapi dengan *plotting route* pengungsian.
 - Pembangunan tembok penahan dan tanggul di sepanjang sungai.
- Pernyataan yang termasuk ke dalam upaya mitigasi nonstruktural banjir adalah ...
- (1) (2) dan (4)
 - (2) (3) dan (4)
 - (1) (2) dan (3)
 - (3) (2) dan (4)
10. Tindakan yang harus dilakukan setelah banjir adalah...
- Secepatnya membersihkan rumah dengan menggunakan cairan antiseptik
 - Mematikan aliran listrik
 - Mengungsi ke daerah aman sedini mungkin
 - Hindari berjalan di dekat saluran air untuk menghindari terseret arus banjir.

B. Jawablah soal-soal berikut dengan singkat dan tepat!

1. Sebutkan tindakan apa yang harus kita lakukan saat terjadi banjir!

Jawab: Membersihkan rumah menggunakan cairan antiseptik.

2. Pembentukan kelompok kerja (pokja) yang beranggotakan dinas atau instansi, apakah upaya tersebut merupakan upaya mitigasi nonstruktural?

Jawab: Iya, tindakan tersebut merupakan mitigasi struktural.

3. Sebutkan 2 aspek penyebab banjir?

Jawab: * terbuntunya aliran air.
* tidak ada pepohonan.

4. Perhatikan gambar di bawah ini!



Berdasarkan gambar tersebut, pengerukan sungai merupakan upaya tindakan mitigasi secara?

Jawab: Struktural

5. Sebutkan tindakan yang dapat dilakukan untuk mengurangi dampak banjir!

Jawab: * membuang sampah pada tempatnya.
* membuat peresapan air.

Soal Post-Test

Geografi –Mitigasi dan Adaptasi Bencana Alam

Nama : M. RIZKY YUSA M.
 Kelas : X IPS 1
 No. Absen : 23

Nilai : 85

A. Pilihlah jawaban yang paling tepat dengan memberikan tanda silang (x) pada huruf a,b,c atau d pada lembar jawaban yang tersedia!

1. Perhatikan jenis-jenis bencana berikut ini!
 (1) Gempa bumi
 (2) Konflik Masyarakat
 (3) Kekeringan
 (4) Angin Topan
 (5) Wabah Penyakit
 (6) Tanah longsor
 Berikut yang termasuk bencana alam ditunjukkan pada nomor...
 a. (1) (3) dan (3)
 b. (1) (2) dan (3)
 c. (2) (3) dan (4)
 d. (3) (2) dan (6)
2. Perhatikan jenis-jenis bencana berikut ini.
 (1) Kekeringan (2) Pemanasan Global
 (2) Badai Tropis
 Jenis bencana tersebut termasuk jenis bencana.....
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 b. Umum
 c. Lokal
 d. Meteorologi
3. Rusaknya bangunan putusnya akses Jalan serta timbulnya korban meninggal Dan luka-luka merupakan dampak gempa bumi secara...
 a. Tidak Langsung
 b. Primer
 c. Sekunder
 d. Langsung
4. Tujuan utama dari Mitigasi bencana adalah...
 a. Mengurangi kerusakan alam yang mungkin terjadi.
 b. Meminimalkan kerusakan infrastruktur
 c. Menghindari kepunahan satwa langka
 d. Meminimalkan korban jiwa dan kerusakan harta benda
5. Upaya nyata yang dapat dilakukan untuk mencegah kemungkinan terjadinya banjir adalah...
 a. Memperluas pembangunan
 b. Mengeluarkan peraturan Pemerintah mengenai ijin pembangunan
 c. Membangun rumah dengan fondasi yang tinggi
 d. Tidak membuang sampah ke sungai.

6. Tindakan apa yang harus dilakukan saat banjir?
- Mematikan aliran listrik di dalam rumah
 - Secepatnya membersihkan rumah
 - Penataan daerah aliran sungai secara terpadu
 - Tidak membuang sampah ke sungai
7. Perhatikan pernyataan dibawah ini dengan baik!
- Tidak membuang sampah/limbah padat ke sungai, saluran dan sistem drainase.
 - Tidak tinggal di daerah bantaran sungai
 - Menghentikan penggundulan hutan.
 - Ikut serta dalam kegiatan latihan-latihan upaya mitigasi bencana.
- Berikut yang termasuk aspek penyebab banjir, kecuali...
- (1)
 - (2)
 - (3)
 - (4)
8. Berikut yang termasuk ke dalam kegiatan mitigasi bencana adalah...
- Perencanaan partisipatif penanggulangan bencana
 - Mengurangi resiko dampak yang ditimbulkan oleh bencana khususnya bagi penduduk.
 - Penataan daerah aliran sungai secara terpadu.
 - Mengadakan gotongroyong membersihkan drainase.
9. Perhatikan pernyataan di bawah ini dengan benar!
- Pembentukan kelompok kerja (pokja)
 - Memonitor dan mengevaluasi data curah hujan, banjir, daerah genang dan informasi lain.
 - Menyiapkan daerah peta rawan banjir dilengkapi dengan *plotting route* pengungsian.
 - Pembangunan tembok penahan dan tanggul di sepanjang sungai.
- Pernyataan yang termasuk ke dalam upaya mitigasi nonstruktural banjir adalah ...
- (1) (2) dan (4)
 - (2) (3) dan (4)
 - (1) (2) dan (3)
 - (3) (2) dan (4)
10. Tindakan yang harus dilakukan setelah banjir adalah...
- Secepatnya membersihkan rumah dengan menggunakan cairan antiseptik
 - Mematikan aliran listrik
 - Mengungsi ke daerah aman sedini mungkin
 - Hindari berjalan di dekat saluran air untuk menghindari terseret arus banjir.

B. Jawablah soal-soal berikut dengan singkat dan tepat!

1. Sebutkan tindakan apa yang harus kita lakukan saat terjadi banjir!

Jawab: • Mematikan aliran listrik.
• Mengamankan barang-barang berharga. §

2. Pembentukan kelompok kerja (pokja) yang beranggotakan dinas atau instansi, apakah upaya tersebut merupakan upaya mitigasi nonstruktural?

Jawab: Iya, upaya tsb merupakan mitigasi non struktural
W

3. Sebutkan 2 aspek penyebab banjir?

Jawab: • Membuang sampah ke sungai.
• Menebang pohon sembarangan.
W

4. Perhatikan gambar di bawah ini!



Berdasarkan gambar tersebut, pengerukan sungai merupakan upaya tindakan mitigasi secara?

Jawab: Langsung (struktural). W

5. Sebutkan tindakan yang dapat dilakukan untuk mengurangi dampak banjir!

Jawab: * melakukan penanaman kembali;
* Membuang sampah pada tempatnya. W
* Tidak menebang pohon sembarangan.

Picture of Research



Picture 1 The field of MAN Pasuruan



Picture 2 The Over view of MAN Pasuruan



Picture 3 the class of X-IPS 1



Picture 5 Pre test before using 3D-AP learning Media

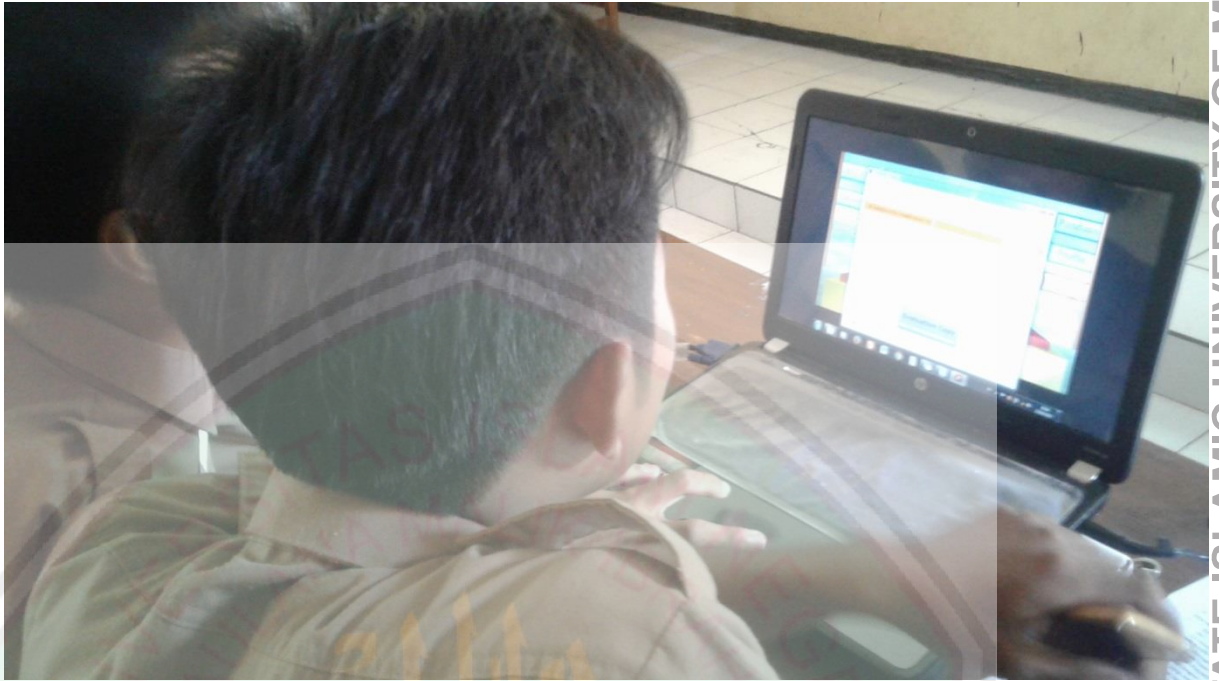


Picture 6 Learning uses 3D-AP



Picture 7 Postest after using 3D-AP





Picture 9 Student Using 3D-AP



STUDENT CV



Name : Ana Firdiansyah
 NIM : 13130085
 Date and place of Birth : 20th January 1995, Sidoarjo
 Fac/Study Program : Faculty of Tarbiyah And Teaching Training
 /Social Science Education Departement
 Entrance Year : 2013
 Address : Irianjaya Street Number 37 Gadingrejo Pasuruan
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 Education Background :

1. TK Dharma Wanita V Jabon (1999-2001)
2. SDN Gadingrejo I Pasuruan (2001-2007)
3. SMPN 4 Pasuruan (2007-2010)
4. MAN Kota Pasuruan (2010-2013)
5. UIN Maliki Malang (2013-2017)

Malang, May 23th 2017
 Writer

Ana Firdiansyah