DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT'S AT MIN 6 JEMBRANA

THESIS

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ISLAMIC PRIMARY TEACHER EDUCATION PROGRAM

TARBIYAH AND TEACHING TRAINING FACULTY

MAULANA MALIK IBRAHIM STATE ISLAMIC UNIVERSITY MALANG

July, 2018

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THESIS

Presented to Faculty of Educationand Teacher Training
Maulana Malik Ibrahim State Islamic University Malang
In Partial Fulfillment of the Requirements for the *Degree of Sarjana Pendidikan* (S.Pd)

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July, 2018

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DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT'S AT MIN 6 JEMBRANA

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DEDICATION

Thanks to Allah because of all blessing and guidance, *Alhamdulillahirabbil'alamin*

My offer of a little assigment to people who already helps a lot and who have been instrumental in my life.

Dear My Beloved Parent, Brothers and Sister in Law

(M. Saleh, Jamilah, Chairul Umam & Dewi Khahindati, Yusril Aqil Wildan dan M. Dava Nurdiansyah)

Thank you for always giving me advice, prayer, spirit and compassion and sacrifice that is not replaceable.

Not to forget all those who participated in the completion of this skripsi help, thank you for everything.

MOTTO

اِنفِرُواْ خِفَافًا وَثِقَالًا وَجٰهِدُواْ بِأَمْوٰلِكُمْ وَأَنْفُسِكُمْ فِى سَبِيلِ اللهِۗ ذٰلِكُمْ خَيْرَ لَّكُمْ إِن كُنْتُمْ تَعْلَمُونَ {التوبة : ٤١}

"Berangkatlah kamu, baik dalam keadaan merasa ringan ataupun merasa berat, dan berjihadlah dengan harta dan dirimu di jalan Allah. Yang demikian itu adalah lebih baik bagimu jika kamu mengetahui" (QS. At-Taubah:41)[1]

[1] Al-Quran dan Terjemah Departemen Agama RI, *Al-Quran dan Terjemahnya*, (Bandung: CV Penerbit Jumanatul'Ali-Art, 2004), page. 657.

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Assalamu'alaikum Wr. Wb.

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CERTIFICATE OF SKRIPSI AUTHORSHIP

I hereby declare that this skripsi is originally written by Ova Mauliana Zulfa, student of Islamic Primary Teacher Education Program (PGMI) as the requipment for degree of Sarjana Pendidikan (S.Pd), Faculty of Tabiyah and Teacher Training at Maulana Malik Ibrahim State Islamic University, Malang. This research writing does not incorporate any material previously written or published by other parties to achieve the other *Sarjana* status of other Higher Tertiary Education, except those wich are indicated in the notes, quotation and bibliography. Therefore, i am the only person who is responsible for the skripsi if there is any objection or claim from others.

Malang, July 31st, 2018

Author

Ova Mauliana Zulfa

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PREFACE

Bismillahirahmanirrahim,

Praise and gratitude to Allah te all merciful and the compassionate. Thanks to Allah because of all blessing and guidance, so the writer is be able to finish the arrangment of qualitative research "Developing Video Learning Media on Vegetative Propagation to Improve Learning Achievment of Sixth Grade Student's at MIN 6 Jembrana" as the final project to get the academician degree at Maulana Malik Ibrahim State Islamic University, Malang. Sholawat and salam uninterruptedly extended except only to our prophet of Muhammad SAW who we are waiting for the intercession in the hereafter later.

The aim of this skripsi is the requirement for obtaining bachelor of education (S.Pd). the specific purpose of this skripsi is as discours of education that is still a lot of things from an education that must be developed. I hope that with finish this skripsi will give benefits to all of the parties.

There is no pernouncable word that can be extended except the great gratitude to the excellency:

1. Mr. Saleh and Mrs. Jamilahwho have always love me, teach me, and give me suggestion in everything i do, who always pray for me and give me spirit.
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11. As well as the various parties who participated help resolve this skripsi. *Jazzakallâhukhoironjazâ*

The writer awwared that in the preparation of this report there are still many mistake for arrange this report, so writer expected critiques ad suggestions from all parties to improve the next report. I hope that this skripsi provides benefits to all parties. *Amin Yaa Rabbal 'Alaimiin.*

Malang, July31st, 2018

Writer

Translation Guidelines of Arab Latin

Translation of arab latin in this skripsi utilize the translation gudelines based on the agreement and decision together between Ministry of Religion and Ministry of Education and Culture of Republic of Indonesia No. 158, 1987 and No. 0543b/U/1987. That is could explained as follow:

A. Letter

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 Vowels

Vowel lenght (a)= â

Vowel lenght (i) = î

Vowel lenght (u)= û

C. Vokal Diphthongs

أوْ	=	Aw
أيْ	=	Ay
أوْ	=	Û
إيْ	=	Î

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ABSTRACT

Ova, Mauliana Zulfa.2018.*Developing Video Learning Media On Vegetative Propagation To Improve Learning Achievment of Sixth Grade at MIN 6 Jembrana.*Skripsi. Islamic Primary Teacher Education Program. Faculty of Education and Teacher Training Faculty. Maulana Malik Ibrahim Malang State Islamic University, Malang. Advisor: Dr. Mokhammad Yahya.Ph.D

Developing Video Learning Media On Vegetative Propagation To Improve Learning Achievment based on the inadequacy of vegetative propagation media for plant propagation. Thus, there arose the idea for producing a learning media that is expected to assist students in understanding the material of vegetative propagation.

The purpose of this development is to research: (1)How is the spesification of video learning media on vegetative propagation to improve learning achievment of sixth grade studentsat MIN 6 Jembrana ,(2)How is the development process of video learning media on vegetative propagation to improve learning achievment of sixth grade students at MIN 6 Jembrana, (3)How is the effectiveness and attractiveness of video learning media on vegetative propagation to improve learning achievment of sixth grade studentsat MIN MIN 6 Jembrana.

To achieve the above objectives, this research uses research of Research and Development (R&D) with the model research of *ADDIE*. There are 5 step (1) Analysis, (2) Design, (3) Development, (4) Implementation, dan (5) Evaluation.

The result of research of development of experimental vegetative propagation video video to improve learning achievement of grade 6 students of MIN 6 Jembrana can be concluded several things: (1) Development of this learning has resulted in the production of vegetative plant propagation video (2) This product has fulfilled component as a media with valid criteria by means of validation of ipa material experts, media design experts, class VI ipa t subjects and class VI trial, (3) Result of analysis of learning achievement improvement of class VI students control group and experimental group obtained by result the student score shows the result of the control group value is smaller than the experimental group. This can be seen from the average score of 62.66 <90.94, it can be said that the artificial vegetative propagation of vegetative learning videos is significantly effective in improving the learning achievement of artificial vegetative matter in the VIA classroom in MIN 6 Jembrana.

Key Word: Devepoment, video learning, vegetative propagation, learning Achievment

ABSTRAK

Ova,Mauliana Zulfa.2018.*Pengembangan Video Pembelajaran Vegetatif Buatan untuk Meningkatkan Prestasi Belajar Siswa Kelas VI MIN 6 Jembrana.*Skripsi. Pendidikan Guru Madrasah. Fakultas Ilmu Tarbiyah dan Keguruan. Universitas Islam Negeri Maulana Malik Ibrahim Malang, Malang. Pembimbing: Dr. Mokhammad Yahya.Ph.D

Pengembangan video pembelajaran perkembangbiakan tumbuhan secara vegetatif buatan untuk meningkatkan prestasi belajar siswadidasari oleh belum memadainya media pembelajaran perkembangbiakan tumbuhan secara vegetatif buatan. Sehingga timbullah ide untuk membuat media pembelajaran yang diharapkan dapat membantu siswa dalam memahami materi perkembangbiakan vegetatif buatan.

Tujuan penelitian pengembangan ini adalah untuk: (1)Mendeskripsikan bentuk video pembelajaran perkmbngbiakan tumbuhan secara vegetatif buatan untuk meningkatkan prestasi belajar siswa kelas VI MIN 6 Jembrana ,(2) Menjelaskan proses dari pngembangan video pembelajaran perkmbangbiakan tumbuhan secara vegetatif buatan untuk meningkatkan prestasi belajar siswa kelas VI MIN 6 Jembrana, (3) Menjelaskan keefektifan dan kemenarikan penggunaanvideo pembelajaran perkmbangbiakan tumbuhan secara vegetatif buatan untuk meningkatkan prestasi belajar siswa kelas VI MIN 6 Jembrana.

Untuk mencapai tujuan diatas, penelitian ini menggunakan penelitian pengembangan *Research and Development* (R&D) dengan model penelitian *ADDIE*. Prosedur penelitian ini meliputi (1) Analisis, (2) Desain, (3) Pengembangan, (4) Implementasi, dan (5) Evaluasi.

Hasil penelitian pengembangan video pembelajaran perkmbangbiakan tumbuhan secara vegetatif buatan untuk meningkatkan prestasi belajar siswa kelas VI MIN 6 Jembrana dapat disimpulkan beberapa hal: (1) Pengembangan pembelajaran ini telah menghasilkanproduk berupa Video pembelajaran perkembangbiakan tumbuhan secara vegetatif buatan, (2) Produk ini telah memenuhi komponen sebagai media dengan kriteria valid dengan cara validasi ahli materi ipa, ahli desain media, guru mata pelajaran ipa kelas VI dan uji coba siswa kelas VI, (3) Hasil analisis peningkatan prestasi belajar peserta didik kelas VI kelompok kontrol dan kelompok eksperimen yang diperoleh hasil nilai siswa menunjukkan hasil nilai kelompok kontrol lebih kecil dari kelompok eksperimen. Hal ini dapat dilihat dari nilai rata-rata yaitu 62,66<90,94, maka dapat dikatakan bahwa video pembelajaran perkembangbiakan tumbuhan secara vegetatif buatan secara signifikan efektif dalam dalam meningkatkan prestasi belajar materi vegettif buatan di ruang kelas VIA di MIN 6 Jembrana.

Kata Kunci:Pengembangan, video pembelajaran, vegetatif buatan, prestasi belajar

الملخص

أوفى مولينا زلفى, ٢٠١٨.تطوير مقاطع الفيديو التعليمية للنباتات الاصطناعية لتحسين تحصيل الطلاب للصف السادس في مدرسة الاءبتداية جمرانا. مقال الجامعي .قسم تربية معلّم المدرسة الابتدائية ، كلية التربية وتدريب المعلمين ، جامعة الإسلامية الحكومية مولانا مالك إبراهيم في مالانج .المشرف: الدكتور محمد يحي Ph.D

تطوير مقاطع الفيديو التعليمية للنباتات الاصطناعية لتحسين تحصيل الطلاب على أساس عدم كفاية وسائل التعلمية تطوير النباتات الاصطناعية. لذالك جاءت فكرة إنشاء عن الوسائل تعليمية أن تساعد الطلاب فى فهم المادة النباتات الاصطناعية.

هدف البحث لهذا التطور هو: (١) وصف شكل من أشكال الفيديو التعليمية للنباتات الاصطناعية لتحسين تحصيل الطلاب للصف السادس في مدرسة الاءبتداية جمرانا (٢)يشرح العملية تطوير مقاطع الفيديو التعليمية للنباتات الاصطناعية لتحسين تحصيل الطلاب للصف السادس في مدرسة الاءبتداية جمرانا (٣) يشرح فعالية وجاذبية استخدام مقاطع الفيديو التعليمية للنباتات الاصطناعية لتحسين تحصيل الطلاب للصف السادس في مدرسة الاءبتداية جمرانا.

لتحقيق الأهداف المذكورة أعلاه، تستخدم هذه الدراسة تطوير الأبحاث (**R & D**) مع بحوث نموذج **ADDIE**. تشمل إجراءات هذه الدراسة (١) التحليل (٢) التصميم (٣) التطوير (٤) التنفيذ (٥) التقييم.

نتائج البحث تطوير وهو: (١) منتجات الفيديو (٢) لقد استوفى هذا المنتج المكون كوسائط ذات معايير صالحة بطريق التحقيق صحة مع أهل المواد العلوم الطبيعية,و أهل تصميم الوسائل, و مدرس المادة العلوم الطبيعية و الاءختبار طالب فى الصف السادس.(٣) زيادة نتائج التحليل لتحقيق التعلم المتعلمين الفئة السادسة مجموعة المراقبة والمجموعة التجريبية التي تم الحصول عليها قيمة نتيجة الطلاب إظهار نتائج المراقبة قيم مجموعة أصغر من المجموعة التجريبية. . فإنه يتبين من متوسط قيمة أي ٦٢،٦٦ < ٩٠،٩٤ , فيمكن القول بأن الفيديو التعليمية للنباتات الاصطناعية فعال بشكل كبير في تحسين التحصيل العلمي عن المادةنباتات الاصطناعية في فصل السادس أليف في مدرسة الاءبتداية جمرانا.

كلمات البحث: تطوير, فيديو التعليمية, نباتات الاصطناعية, تحصيل العلمي

CHAPTER I

INTRODUCTION

A. Background

With the development of science and technology, as well as advice and opinions of the teachers then presented science learning by applying various approaches that are relevant to science learning objectives namely: presents various facts or experiments that can add to the experience of students both at home and at school. Arouse interest in students to be able to investigate the phenomena of nature around them through observation and develop linkages between science and technology.

Science or Natural Science is a science subject matter is something to do with nature and everything in it. Things that need to be learned or observed in these subjects is to understand the events in the universe. According Izzak H. Wenno states that are studied in science is "Cause-effect, the causal relationship of the events that occur in nature".[1]

One of the disciplines taught in elementary and closely related to the phenomena occurring in the environment of students in daily life are subjects of Natural Sciences (IPA). IPA is a collection of various branches of science in which biology, physics, chemistry, and so on. Expectations of learning science to learn about yourself and nature. This is according to Eneng Khoirunisa "IPA Education is expected to become a vehicle for students to learn about themselves and the

[1]Izaak H. Wenno, *IPA Model Model-based Development of Problem Solving Method based Characteristics of Students in Learning at SMP / MTS*, FKIP Pattimura University in Ambon. June 2010 Th. XXIX 2, hlm. 176

environment, as well as prospects for further development in applying it in everyday life".[2]

Learning science is a container or a place for children to develop its capabilities through activities or experiences carried out individually or in groups. Through this experience the students can correct misconceptions contained in the materials science and build new concepts that must be mastered.

Learning in primary schools can be done in groups. In accordance with the statement Desmita "... children of primary school age is more emphasis on the importance of communal activities, such as talking, wandering, walking to school, talking on the phone, listen to music, play games, and jokes"[3], Joint activities can be built through learning activities that emphasize psychomotor activity. Grade IV-VI has entered into the stage of abstract thinking (formal operations), so it is able to understand scientific concepts simply.[4]

According pieget children aged 8-9 years is a concrete operational stage is a way of thinking the child is less egocentric and children berfikirnya hsnys in a concrete situation, in other words if the child is faced with a problem (eg the problem of classification / clustering) verbally namely without material concrete, then the child has not been able to solve the problem well. So the child can solve the problem simply adrift with problems with objects or something concrete. Hisrelationship with the development of students' learning, even by study anywhere

[2]Eneng khairunnisa,*Meningkatkan hasil Belajar Siswa pada Pelajaran IPA Materi Siklus Air dengan Menerapkan Metode Pembelajaran Eksperimen Penelitian Tindakan Kelas terhadap Siswa Kelas V SDN Bunisari Semester II Cianjur*,PGSD Universitas Pendidikan Indonesia,2013,hlm. 7

[3]Desmita, *Psikologi perkembangan siswa* (Bandung: PT Young Rosdakarya,2014), hlm. 224

[4]E. Mulyasa, *Pengembangan dan pelaksanaan Kurikulum 2013* (Bandung: PT Young Rosdakarya, 2015), hlm.86

where more students received if all of the students learn are things or something that is real (concrete).

In modern learning concepts, practical science teaching and learning activities in the classroom suggests the existence of two basic activities, namely the process of discovery and invention. Tangible media (concrete) capable of increasing the interest, focus attention, able to present a rare natural phenomenon and have compatibility with the character of the development of elementary students (Collette & Chiappetta, 1994: 116: Abruscato & DeRosa, 2010: 85).

School education is a mandate to develop human resources which is done systematically, paktis and tiered. In the implementation of teaching in schools, teachers have a major role to achieve a good learning process. In connection with this role, the teachers are required to be possessed sufficient competence in terms of teaching in schools. Lack of competence of teachers then led to the implementation of teaching to substandard resulting learners are not happy to peajarannya so peseta students may have difficulty learning and achievement decreases.

Hence the need for a wide variety of suitable methods or strategies that students do not saturate and always enthusiasm in learning the method of fun, creative, and innovative, which can be applied in a learning process.

Researchers took the topic in the development of learning videos about vegetative propagation. The reason researchers take the topic above bacause at this time the teachers must have skills in making their own media to support the learning and by using learning media can incrase the student's motivation in following the learning and facilitate the students in understanding the lesson.

Of the things that have been described above, the researcher is willing to do the research, titled from the things that have been described above, the researcher is willing to do the research entitled ”Developing Video Learning Media on Vegetative Propagation to Improve Learning Achievment of Sixth Grade Student at MIN 6 Jembrana”

B. Formulation of the Problem

Based on the background mentioned above, there are some problems that can be assessed as follows:

1. How is the spesification of video learning media on vegetative propagation to improve learning achievment of sixth grade studentsat MIN 6 Jembrana?
2. How is the development process of video learning media on vegetative propagation to improve learning achievment of sixth grade studentsat MIN6 Jembrana?
3. How is the effectiveness and attractiveness of video learning media on vegetative propagation to improve learning achievment of sixth grade studentsat MIN 6 Jembrana?

C. Objectives of the Development

The purpose of research is something to be achieved and planned at the beginning of the study and is expected to be reached when the study was completed. Based on the formulation of the problem above, the purpose of this study is as follows:

1. To know the specification of video learning media on vegetative propagation in improve learning achievment for sixth grade studentsof elementary school.

2. To produce video learningmedia on vegetative propagation to improve learning achievment of sixth grade students at MIN 6 Jembrana.
3. To determine the effectiveness and attractiveness of video learning media on vegetative propagation in improve learning achievment for sixth grade studentsof elementary school.

D. Benefits of the Development

In this study, researchers hope that the results of research can provide usefulness and benefits to various parties, including:

1. For Researchers

   Knowing the effectiveness of development tutorial video IPA artificial vegetative propagation material to improve the understanding of the concept and creativity of the students to the sixth grade of primary school,

2. For Teachers

   Teachers can utilize the materials that exist in the environment in accordance with the mandate of the learning Permendiknas no. 23, 2006. At a later stage, they were able to develop a similar teaching materials independently.

3. For Student

   Through the development of teaching materials artificial vegetative propagation material science to improve understanding of the concept and creativity of the students to the sixth grade of elementary school, students will gain knowledge on the concept of constructivist learning. They understand the material basis of what they have earned from the activity of reading and discovery concept independently.

4. For developing of science

   Can add knowledge in the development of learning media that is appropriate for students so as to improve student achievment and able to utilize exiting technology to facilitate the learning process..

E. Assumptions of the Development

Some of the assumptions underlying the video learning media on vegetative propagation to improve learning achievment of sixth grade student.

1. With the development of instructional video learning media on vegetative propagation to improve learning achievment of sixth grade student, the student is expected to be more creative and motivated for the spirit of learning.
2. Students are expected to get a meaningful learning experience for finding proving themselves through learning experiences and learning outcomes of students is expected to increase.

F. Scope of the Development

1. This instructional video is limited to artificial vegetative propagation material of sixth grade first semester
2. The object of this study is limited to the use of the textbook in class VI
3. The subjects were students of class VI.

G. Product Specifications

Development of video learning media on vegetative propagation to improve learning achievment of sixth grade student has the following specifications:

1. Physical form Video Learning Media on vegetative propagation to improve learning achievment of sixth grade student in the form of a CD.
2. Descriptive science teaching videos created using software Wondershare filmora. Wondershare filmora itself is a software used to create / edit videos. In a video that was developed was to discuss the material in a vegetative propagation artificial plants and steps in conducting grafts, cuttings, grafting and graft. In the video also given a subtitle in order to facilitate the children to understand the material. With original sound from the product developer. The developed learning video has a duration of 06 minutes 33 seconds.

H. Research Originality

In this study, researchers conducted a pre-research by surveying thesis and previous research journals related to the title of this study, as well as literature review of various books, as follows:

1. Research conducted by Fiskha Ayuningrum, instructional video media development for students of class X on the competence of soup continental process in SMK N 2 Godean, thesis, 2012.The study resulted in a product with the instructional media competence soup continental process. Media developed this involves graders X SMK N 2 Godean as the population.
2. Research carried out Achmad Siddik Fathoni, development of instructional media video tutorials on subjects of class X operating system multimedia SMK Negeri 6 Surakarta. The study resulted in a product a

medium of learning. Media developed this involves multimedia class X SMK Negeri 6 Surakarta as the population.

3. Research conducted by Hamzah Fansuri, Application of instructional videos to improve student achievement of class X in the metal fabrication techniques subjects oxy-acetylene welding theory in SMK N 1 Seyegan. The study produces instructional videos to improve student achievement in the subjects of oxy-acetylene welding theory, Media developed this involves gradersX metal fabrication techniques as the population.
4. Research conducted by Hanna Puji Maleeva, Penengembangan learning media using video media and disaster mountain material of class VII SMP Muhammadiyah 4 Sambi, Boyolali. The study produces instructional videos mountain material and disaster, Media developed this involves studentsclass VII SMP Muhammadiyah 4 Sambi, Boyolali as the population.

Table Originality Research

No	Title Research	Equation	Difference	originality Research
1	Fiskha Ayuningrum, *Pengembangan media video pembelajaran untuk siswa kelas X pada kompetensi mengolah soup continental di SMK N 2 Godean*, skripsi, 2012	Development of instructional video media	• To the students of class X • Competence process continental soup.	-Develop media instructional videos to improve understanding of the concept and creativity of students -objek research contained in Class VI
2	Achmad Siddik Fathoni, *Pengembangan media pembelajaran video tutorial pada mata pelajaran system operasi kelas X multimedia SMK N 6 Surakarta*, skripsi, 2016.	• Development of instructional media video tutorials	• To the students of class X • subjects operating system	
3	Hamzah Fansuri, *Penerapan video pembelajaran untuk meningkatkan prestasi belajar siswa kelas X tehnik fabrikasi logam pada mata pelajaran teori las oxy-acetylene di SMK N 1 Seyegan*, skripsi,2013	• Media video lessons	• To the students of class X • to improve student achievement of class X in the metal fabrication techniques subjects oxy-acetylene welding theory	
4	Hanna Puji Maleeva, *Penengembanga*	• Penengembangan instructiona	• mountain material and disaster	

	n media pembelajaran menggunakan media video materi gunung dan kebencanaan kelas VII SMP Muhammadiyah 4 Sambi Boyolali, skripsi, 2015	l media using video media	• class VII SMP Muhammadiyah 4 Sambi, Boyolali.	

I. Operational Definition

In research and development, there are some terms in the title that aims to avoid distortion of meaning in understanding, therefore, here are some definitions of terms, among others:

1. Development

Development is the systematic application of knowledge or understanding, directed to the production of useful materials, devices and systems or methods, including design, development and improvement priorities and new processes to meet specific requirements.[5]

Instructional materials are all kinds of materials that are used to help teachers / instructors in carrying out the teaching and learning activities in the classroom. Teaching materials meant when in the form of teaching materials and unwritten.

2. Instructional Media

Everything that can be used to deliver a message from the sender (teacher) to recipients (students) so that it can stimulate the mind, feelings, concerns and interests as well as the student's attention in a way that learning occurs.

[5] Nusa Putra, *Penelitian & pengembangan penelitian dan pengembangan*

3. Audio visual

Audio-visual media is the medium conveys information that has characteristics audia (sound) and visual (pictures). The media type has a greater ability, as it covers both of these characteristics.

Furthermore, the audio-visual media is divided into two, namely:

a) Audio-visual silence, the media featuring sound and still images such as film frames voice (sound slides), frame movie sound and voice prints;

b) Audio-visual motion, namely the media to display the elements of sound and moving images such as voice and video cassette movies.

Another division of the audio-visual media are:

a) pure audio-visual equipment, ie both elements of sound and pictures come from a single source such as a video film cassette;

b) The audio-visual is not pure, that is the element of sound and image elements derived from different sources, for example the film frame picture sound elements from a slide projector and sound elements sourced from the tape recorder.

J. Systematics Discussion

Systematic discussion in this development will be discussed research into six chapters, each chapter has several subchapters discussion.

Chapter I discussing about the background of the problem, the formulation of the Problem, the purpose of research and development, preliminary research, projection specification product development, the importance of research and

pengebangan, assumptions and limitations of the development, definition of the term and systematic discussion

Chapter II literature review shows that theory study consisted of learning achievment, instructional media, instructional video development, learning theory underlying.

Chapter III the research method contains the model of development, product development, and product testing.

Chapter IV contains a study of data exposure that contains a description of material science textbooks vegetative propagation validation data presentation.Contains discussion of the analysis of the development of learning videos, analysis of the effectiveness, and the attractiveness of the teaching materials koefesiensi IPA artificial vegetative propagation material, and revision of product development.

Chapter V contains conclusion of development and advice.

CHAPTER II

LITERATURE REVIEW

A. Theoretical Basis

1. Learning Media

a. Understanding Media Learning

The word comes from the Latin media which is the plural form of the word medium, which literally means an intermediary or introduction. Media is an intermediary or an introductory message from the sender to the receiver. Given the many restrictions on the media. Gagne stated that the media of various types of components in the environment that can stimulate students to learn. Briggs believes that the media is all the physical tools that can present the message and stimulate students to learn.[6]

From these definitions it can be concluded that the definition of media is something that is channeling messages and can stimulate the thoughts, feelings, and the willingness of the audience (students) so as to encourage the learning process in itself. Creative use of the media will allow the audience (students) to learn better and can improve the performance of their accordance with the objectives to be achieved.[7] Thus, the media is a vehicle for channeling information learned or channeling messages.[8]

b. Learning Media Creation Functionality

[6]Arief S. Sadiman, dkk.*Media Education* (Jakarta: King Grafindo Persada, 2003), hlm. 6.
[7]Asnawir and Basyiruddin Usman, *Media Learning* (Jakarta: Ciputat Press, 2002), hlm. 11.
[8]Syaiful Bahri Jamaroh and Aswan Zain, *strategi Belajar Mengajar* (Jakarta: PT Rineka Cipta 2010), hlm. 120.

At first the media only serves as a tool in teaching and learning activities in the form of a facility that can provide a visual experience to their students in order to encourage the motivation to learn, clarify and simplify the complex and abstract concepts become more simple and concrete and easy to understand. Thus the media can serve to enhance absorption and retention of children to learn the material.[9]

Therefore, the media program implemented systematically based on the needs and characteristics of fiber behavior directed at students who wish achieved. Media experts have formulated the characteristics of the use of media in education, so that collected a conception of educational technology, namely that have these characteristics:

a) Or student-oriented goals
b) Applying the concept of a systems approach
c) Utilizing various media sources

In line with the consolidation of the concept, the media functions not only as a carrier of information or message. In the teaching and learning activities, media education / teaching in general have utility for overcoming barriers in communication, physical limitations in the classroom, students' passivity and unify their observations.

Then with the influence of audio and video technology in the education system, was born the audio-visual tools, especially emphasizing the use of direct experience / concrete to avoid wordiness.

[9]Asnawir and Basyiruddin Usman, op. cit., hlm. 21.

At this time learning media has a function:

a) Help make it easier for students and helps make it easier for teachers.
b) Give a more real experience (abstract can be concrete)
c) Drawing the attention of a larger student (course lessons are not boring)
d) All the senses can be activated. The weakness of the senses can be offset by other senses.
e) More attention and interest of students in learning
f) The world can evoke theory with reality.[10]

c. Character Learning Media

Each instructional media has certain characteristics, which are linked or viewed from different angles. For example, Schramm viewed in terms of its economic characteristics of the media, the scope of targets that can be covered, and ease of control by the user. Characteristics of the media can also be seen by its ability arousal entire sensory organs. In this case, knowledge of the characteristics of the medium of learning is very important for the grouping and media selection. Kemp also noted that the characteristics of the media is the basis for the selection of media that is tailored to the particular learning situation.

Gerlach and Ely in his Azhar Arsyad found "three characteristics of media based learning media usage instructions to anticipate the learning conditions in which teachers are not able to or less effective to do so.

All three characteristics or traits instructional media are:

[10]*ibid*, hlm. 24-25

a) *Feature fixative*, Which describes the media's ability to record, store, preserve, and reconstruct an event or object.

b) *Feature manipulative*The ability of media to transform an object, event or process in addressing the problem of space and time. For example, suppose the larvae become pupae and then into butterflies can be presented in a shorter time (or premises accelerated time-lapse recording). Or conversely, an event / events can be slowed its delivery in order to obtain a clear sequence of events that event.

c) *Feature distributive*, Which describes the ability of transporting media object or event through space, and simultaneously the incident served to a large number of students, in various places, with the same stimulus relative experience about the event.[11]

d. A variety of Instructional Media

Views of its kind, the media is divided into;[12]

a) Auditif Media

The media auditif is relies solely on voice capabilities, such as radio, cassete recorder, the vinyl record. This media is not suitable for the deaf or have abnormalities in auditory.

b) Visual Media

Visual media is media that simply relying on the sense of sight. This visual media featuring still images like a film strip (film sets), slides (film frame) photographs, drawings or paintings, and prints. There is also a visual media

[11] Pausil, *Learning Media Types & Characteristics*(http://fzil.wordpress.com/2013/04/18/jenis-karakteristik-media-pembelajaran, Accessed August 18, 2016 14:08 hours GMT).

[12]Syaiful Bahri djamarah dan Aswan Zain,*op,cit.*, hlm. 124-125

displays the image or symbol that moves like a silent movie, and cartoon movies.

c) Audio Visual Media

Audio-visual media is the medium conveys information that has characteristics audia (sound) and visual (pictures). The media type has a greater ability, as it covers both of these characteristics. Furthermore, the audio-visual media is divided into two, namely:

a) Audio-visual silence, the media featuring sound and still images such as film frames voice (sound slides), frame movie sound and voice prints;

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b) The audio-visual is not pure, that is the element of sound and image elements derived from different sources, for example the film frame picture sound elements from a slide projector and sound elements sourced from the tape recorder.

Conceptually learning effectiveness can be interpreted as a treatment in the learning process that has these characteristics:

a) The atmosphere can be influential or memorable thing about my appearance; and

b) success of the business or actions that affect student learning outcomes.

The effectiveness of learning through visual media can be seen from the level of enjoyment of the student / students when learning (reading) or moving text display. Images, symbols or visual symbol can arouse emotions and attitudes. Hamalik in Azhar Arsyad (2007: 15) argues that the use of instructional media in the learning process can generate new desires and interests, raise motivation and stimulation of learning activities, and bring psychological effects on students. The use of instructional media will greatly assist the effectiveness of the learning process and delivery of messages and content, in accordance with the demands of the curriculum.

2. Vegetative Propagation

a. Understanding Vegetative Propagation

According to Riodevriza (2010) "artificial reproduction is Vegetative plants that do not occur naturally, but deliberately made with a mixture of hand manusiadengan goal to get new plants quickly, this way is the right way produce saplings of plants ".

Meanwhile, according to Mangeondidjojo, W,(2003) “artificial vegetative is a set of techniques to produce new individuals without going through a marriage but with the help of man ".[13]

From the explanation above it can be concluded that artificial breeding is vegetative plants are not mating intentionally done by humans to get new individuals.

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[13]Ayu Apri Leli Emi, *Teknologi Produksi Benih “Laporan Perbanyak Vegetative”*,2014, hlm. 7

b. Various of Vegetative Propagation

The subject of plant breeding in artificial vegetative namely:

1. grafting (*mencangkok)*

Grafting is to multiply the plant by cutting the branches of the parent plant. Which can be grafted plants are dicotyledonous plants or seeds into pieces of two, such as oranges, guava, mango, rambutan, durian, and so forth.

Figure 2.1 grafting

2. cuttings (*stek)*

Cuttings are multiply plants by planting pieces of the parent plant stems. The plants can be in cuttings include cassava, sugar cane, rose, jasmine, and kale.

In addition to stem cuttings also known as leaf cuttings and cuttings tops. Plants that can to be copied with among others the shoot cuttings and brats (the-tehan). While the plants are propagated by leaf cuttings include begonias and sanseviera.

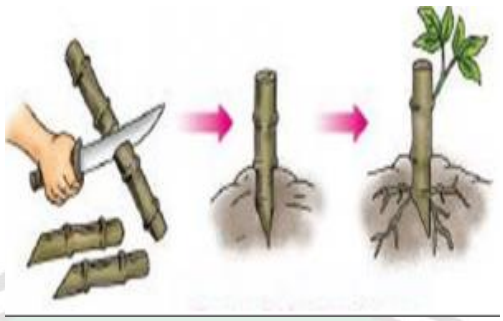

Figure 2.2 cutting

3. Joining *(mengenten)*

Connecting or implant is to combine the rootstock and the scions of two similar plants. Interest connect is combining traits from two plants in order to obtain datu plants that have superior properties. For example, two mango crop. The first mango crop is strong but the fruit acids, while the second mango plants rooted weak but its fruit is very sweet. To obtain a deeply rooted and sweet fruit, then the lower stem of the plant mango strongly rooted scions connected with sweet fruit of the mango crop.

Some of the reasons why the fruit plant seeds by means of grafting because it is more easily done when the rootstock was young enough without the need to wait for the rootstock was old enough so it is more efficient from the rootstock, setup time the growth of the entres a relatively quicker than green, more efficient ways in pemanafaatan number of entres than seedling grafting seedling growth, and susuan more vigor in the appeal of green seedlings on the growth of the plant environmental conditions the same.

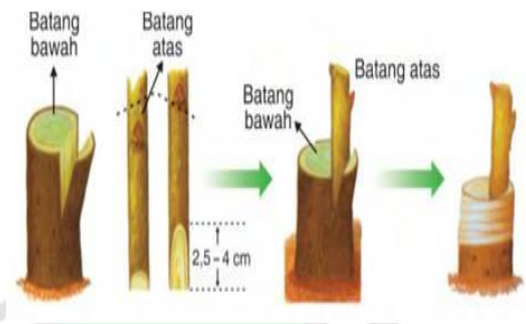

Figure 2.3 joining

4. Sticking *(okulasi)*

Grafting or stick is paste plant buds from two similar, but different in nature eg mango mango manalagi with cotton candy. Basically the same purpose with the aim implant grafting, which combine the superior characteristics of the two plants in order to obtain a plant that has particularly superior combined properties. According to Hamid, n. Yusran (2011) there are some secrets that affect the success of the Green so that success in green fruit plants:

a. Select the precision of the shoots that will be pasted is one of the keys to the success of the green. The eye of the selected shoots should be potentially grow. Characteristics of fruit on the plant, select the eye shoots that have come out of the small shoots. While for other plants, it is recommended the eye shoots at all yet to germinate. For fruit crops often diakali by way of perompesan/pelerengan. The trick with prune depleted leaves on shoots of the mango tree. Perompesan leaf will spur the growth of new shoots. That's what the new shoots can be used.

b. Note also how to make the incision of the stem and stem stem top. The wood of the parent trees may not be cut throat. Kambium even, a kind of mucous

stuck to the wood cannot be lost. Because kambium serves to traffic food from the leaves to the plant body. If missing then kambium food supply to the eye patch No. Nor did the new shoots were to grow. There should be no wood left on the skin of the eye patch. So easy to make the incision, cut the branch taken eye tempelnya. Prepare first the eye patch of the upper branches. Then the parent tree sayat. Purpose is to make kambium not dry. Use a sharp knife and sterile sayatannya results so neatly and higenis.

c. Tie eyes paste also should not be indiscriminate. Ties should be a meeting until the wind can't get into the glue. Must be fit, should not be too tight nor too loose. The skin of the eye shoots attaches perfectly suffices. If it is too tight, it could suffocate. The eye shoots may join the closed, bole is also not in the lid. Eyes closed buds have a surplus. Interference from the outside, especially the water cannot enter. But bond eye shoots should not be taut. So that shoots can grow. If the eye shoots not closed should be sure the water does not touch the glue. Because, when hit by a foul can entres.

d. Green, when performing work should be fast. The incision in the parent tree should not be too long in the open air. If it's too long kambium on wood can dry. In order that the work can be fast and not terganngu, we recommend that you prepare all the tools and materials is needed first.

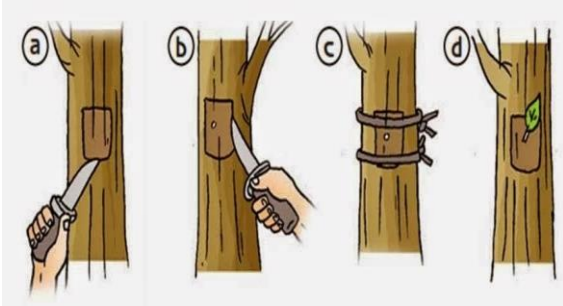

Figure 2.4 sticking

3) Factors that Affect the Success of Plants in Artificial Vegetative Reproduction.

Factors that affect the success of Plants In Artificial Vegetative Reproduction. (Wudianto, R, 1998):

a) Temperature Environments

High low temperature menadi one factor that determines the growing swell, reproduction and survival of plants also. A good plant for temperature is around 22 ° C to 27 ° c. Temperatures are more or less than the normal range can lead to slow or stop growth.

b) Moisture/Humidity

Moisture in the air can affect the growth and development of plants. Humid places favourable for plant where plants get water reduced evaporation and younger who have an impact on the formation of the cells faster.

c) Sunshine

Sunlight is needed by the plant to perform photosynthesis (especially green plants). If a crop shortage of sunlight, then plant it can seem pale and yellowish plants were color (etiolasi). On sprouts, sunlight can hamper growth.

d) Hormones

Hormones in plants also play an important role in the process of development and growth hormone Auxin-like to help cell renewal, challenged for the hormone pemanangan hormone, cell division and sitokinin to encourage cell division and the hormone ethylene to hasten fruit to ripen.

3. Learning Achievment

a. Understanding of Learning Achievment

Learning achievement is the result of the student's education after activities stated in the form of a letter or number value. Improved learning achievement could be achieved with attention to several aspects, both internal and external. External aspects are how well prepared learning environment and facilities are empowered, while internal aspects covering aspects of child development and the uniqueness of the individual child's personal.[14]

Purwanto (2007) gives the sense of accomplishment of learning i.e. "results achieved by someone in the business of learning as stated in report cards". Next Winkel (1997) says that "the achievements of the study is a proof of the success of the study or person's ability of students in learning activities in accordance with the weighting of titles," while according to Nasution, S (1987) learning achievements "perfection is reached someone in thinking, feeling and doing, learning achievement is said to be perfect if it meets three aspects namely: cognitive, affective and psikomitorik, by contrast is said to be less satisfying

[14]M. Nur Gufron, Rini Risnawita, S, *Gaya Belajar Kajian Teoritik*, (Yogyakarta:Pustaka Pelajar,2013), hlm. 9-10

accomplishment if one has not been able to meet the target in the third such criteria.[15]

b. Factors that Influence the Achievement of Learning

There are two factors that affect children's learning outcomes, namely external factors and internal factors

1.) External Factors

Factor out consists of two essential parts, i.e. the:[16]

a.) Environmental Factors

Environmental conditions also influence the processes and outcomes of learning. This environment can be a physical environment/natural and social environment.

Social environment, whether human or other things can also influence the processes and outcomes of learning. Someone who is learning a complicated problem and requires a high concentration, would be disturbed if anyone else hanging around in nearby, out go in her room, or conversing loudly enough.

Other social environments, such as engine noise factory, the bustle of traffic, the rumble of market, and so forth can be influence the process of learning results. That's why it is recommended that the environment of the school was founded in a place far from the crowd factory, the bustle of traffic and the market.

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[15]Ghullam Hamdu, Lisa Agustina, *Pengaruh Motivasi Belajar Siswa Terhadap Prestasi Belajar IPA di Sekolah Dasar Study Kasus Terhadap Siswa Kelas IV SDN Tarumanegara Kecamatan Tawang Kota Tasikmalaya,* Dosen Universitas Pendidikan Indonesia 2011, hlm 83

[16]Sumadi Suryabrata, *Proses Belajar Mengajar di Perguruan Tinggi,* (Yogyakarta:Andi Offset,1989), hlm.9

b.) Instrumental Factors

instrumental factors are factors that the existence and purpose designed in accordance with the expected learning outcomes. These instrumental factors can be intangible factors hard (hardware), such as building supplies learning, practical tools, libraries, and so on. As well as soft factors (software), such as curriculum, material/program that should be learned, learning guides and so on.

2.) Internal Factors

Factor in the individual's conditions or the child is learning itself. Individual factors can be divided into two parts, namely the child's physiological condition and the condition of the child pisikologis.[17]

a.) The Child's Physiological Condition

Physiological conditions in General, such as vibrant health, not in their hope to accomplish, not in a State of physical disability, such as foot/hand (because it will disturb the physiological), etc. Will greatly assist in the process and the results of the study.

In addition to the General conditions, which are no less important in affecting the process and the results of learning is a condition of sensory perception, especially our senses of sight and hearing.

Because of the importance of vision and hearing, then in formal education, people do various studies to find forms and how to use props that can be seen at once heard (audio-visual). A good teacher will certainly pay attention to how the circumstances of sensory perception, especially vision and hearing students.

[17]Ibid., 10-13

b.) The condition of the child pisikologis

There are several factors that are considered pisikologis affect the process and results of the study, including the following:

(1.) Interest

Interest greatly influences the processes and outcomes of learning. Kalu someone not interested to learn sesutu, he cannot be expected to be managed properly in studying it. If a person should learn something with interest, then the expected results would be better.

(2.) Intelegence

Intelligence holds major role in determine whether someone successfully learn something or take something educational programs. People are smarter in General will be better able to belajr than people who are less intelligent. A person's intelligence can be measured using a tool well known as IQ (Intelligence Quotient)

(3.) Talent

In addition to the intelligence, talent is a huge factor in its effect on the process and outcomes of learning. That learning in the appropriate field with talent will enlarge the possibilities of a successful business.

(4.) Motivation

Motivation is the psychological conditions that encourage someone to do something. So, the motivation to learn is a psychological condition that drives a person to learn. Therefore, enhancing the learning motivation of students play an important role in order to achieve optimal learning outcomes.

(5.) Cognitive Skills

Although it is recognized that the purpose of education which means that belajr goal also includes three musty cognitive aspects, i.e., aspect, affective, and psychomotor aspect, but it cannot be overlooked that until now the cognitive measurement still preferred to determine the success of one's learning. While aspects of the affective and psychomotor asep more as complements in determining the degree of success in school.

c. Indicator of achievement of learning

In principle, the disclosure of the results of the study covers the whole realm of ideal psychological has changed as a result of the experience and learning of students. Nevertheless, disclosure of the change in the behaviour of the entire realm, especially the realm of sense of pupils is very difficult. This is due to the results of a study that there are intangible (cannot be touched). Therefore, teachers can do in this case is to simply take a snippet changes the behaviour that is considered important and expected and can reflect changes that occur as a result of student learning, both prolific and inventive flavors as well as prolific karsa.

Key staple to acquire data size student learning outcomes as they decompose above is mengetaui the outlines of the indicators associated with the kind of achievements to expressed or measured. The following is a table type, indicators, and how to evaluate achievements.[18]

[18]Muhibbinsyah,*Psikologi Pendidikan dan Pendekatan Baru*,Bandung:PT Remaja Rosdakarya,2010, hlm 192-195

Table 2.1 Types of Indicators, and How to Evaluate Achievement

Domain/Kind Of Achievement	Indicator	How To Evaluate
A. The Realm of Copyright (cognitive)		
1. Observations	1. Can show; 2. Can compare; 3. Can combine.	1. Oral test; 2. Written test; 3. Obseation.
2. Memory	1. Can mention ; 2. Can show again .	1 Te writtwn test; 2 Oral test; 3 Observation.
3. Understanding	1. Can explain ; 2. Be able to define its own oral .	1. The written test ; 2. Oral tests .
4. Application/Implementation	1. Can provide examples ; 2. 2. Can use appropriately.	1. The written test 2. Administering tasks 3. Obseration
5. Analysis (examination and carefully parsing)	1. 1. Be able to decipher ; 2. 2. Can classify	1. The written test; 2. Administering tasks .
6. Sistesis	1. Can connect; 2. 2. It can be concluded; 3. 3. Be able to generalize (make a general principle)	1. The written test; 2. Administering tasks
B. The Affective Domain		
1. Acceptance	1. Shows a receive ; 2. Show the attitude of refusing .	1. The written test ; 2. Oral tests ; 3. Observation.

2. Welcome	1. The willingness to participate ; 2. The willingness of harness	1. Attitude scale tests; 2. Administering tasks; 3. Observation
3. Apresiation	1. Considers important and helpful 2. Consider beautiful and harmonious; 3. Admire .	1. Attitude scale tests; 2. Administering tasks; 3. Observation
4. Internalization	1. Admit and holds 2. Deny .	1. Attitude scale tests; 2. Granting the expressive and tasks proyektif
5. Characterization	1.Instituting; 2. Incarnating in personal and daily behavior	1. Granting the expressive and tasks proyektif 2. Observation.
C. The Psychomotor Domain		
1. Moving and acting skills	Skills to coordinate motion of the eyes, hands, feet, and other members of the body.	1. Observation; 2. Test action.
2. Verbal expression skills and non-verbal	1. recite Eloquence; 2. Skills make a facial and bodily movements.	1.Oral tests ; 2. Test action 3. Observation .

B. Thinking Framework

Basically, science is a process of discovering knowledge through questions about the human natural environment both living and nonliving. Knowledge of the human relationship with nature, then not only provide additional knowledge alone. However, it could also alter or correct attitude and perspective in assessing the human relationship with nature that balanced contextually.

Ipa selected material is in a vegetative propagation artificial plants. As we know science teaching in primary / MI associated with the natural surroundings or environment. In lessons before the teacher delivering the material, the teacher first member of the questions relating to the material being taught with the existing reality surrounding environment, so students will be easier to understand the concept that teaches and students feel more energized in the following study.

CHAPTER III

RESEARCH METHOD

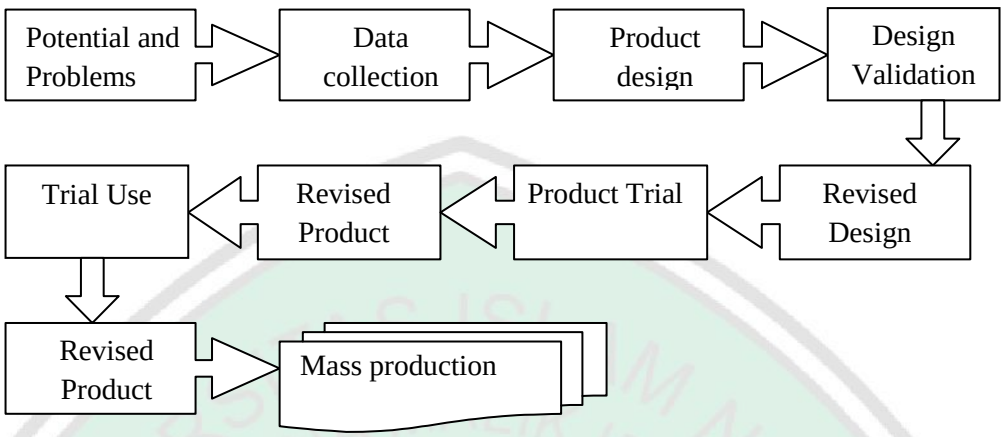
A. Type of Research

This type of research used in this research is the development or research and development (R & D), the reason for taking research development researcher has the ultimate goal of research and development in the field of education is a new product or improvement of old products to enhance the performance of education in improving the understanding of the concept and creativity of students of class VI. The goal is to produce educational product in the form of teaching materials for students of class VI. This is done in order to improve the understanding of the concept and kereatifitas students through teaching materials artificial vegetative propagation material science that will enable them to deepen understanding of the material.

Sugiyono defines Research and Development as the research methods used to produce a particular product, and test the effectiveness of the product. So the research and development of longitudinal (can gradually Multy years).[19]

[19]Sugiyono, *Metode penelitian pendidikan* (Bandung: Alfabeta, 2015), hlm. 40

The steps of research and development are as follows:



B. Development Model

Model development in this research using ADDIE pengembagan models. The mid-1990s, educational technology experts again tried to freshen their perceptions of the learning design. The deal is ADDIE, which is based instructional design system approach. ADDIE true sense, namely:

***A**nalyze* (Analyze): needs, learners, and so on.

***D**esign* (Design): formulation of competence, strategy.

***D**evelop* (Developing): teaching materials, media, and so on

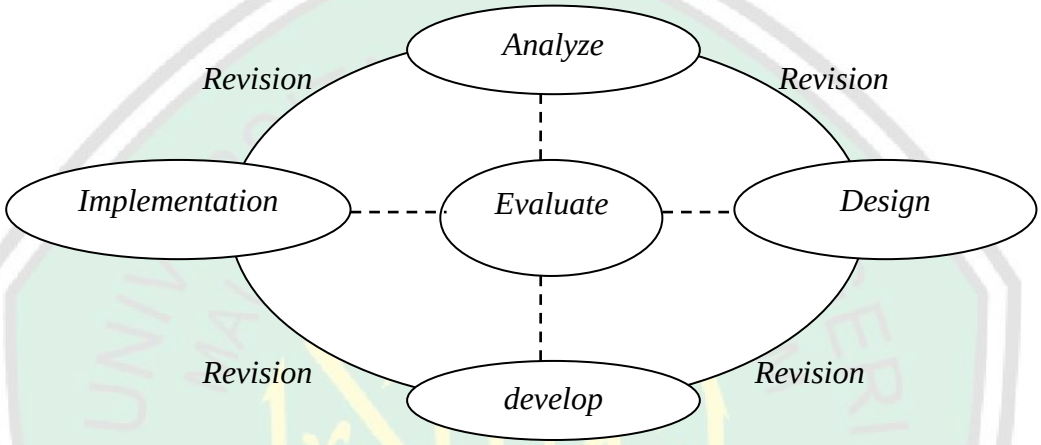
***I**mplement* (Execute): face to face, assessments and so on.

***E**valuate* (Assess): learning programs, improvement.

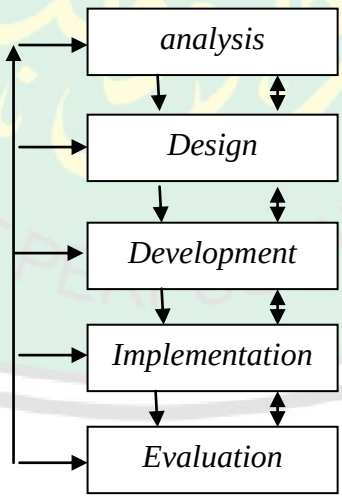
Two experts who helped develop the concept of ADDIE is Raiser and Molenda. They are different in formulating ADDIE visually. Raiser formulate ADDIE using verbs (design, develop, implement, Evaluate). Raiser explicitly describe the revision or improvement occurs in each phase. Molenda states that all components of the

noun (analysis, design, development, implementation, evaluation). He described improvements through broken line drawings.[20]

Molenda said also that a revision could take place continuously in each stage that passed, though not stated clearly.



ADDIE According to Reiser



ADDIE According to Molenda

[20] Dewi Salma Prawiradilaga, *Prinsip-prinsip desain pembelajaran*, (golden Prenada Media Group: Jakarta, 2007), hlm 21

C. Development Procedure

Based on the model ADDIE instructional design systems approach mentioned above, the procedure is the development in research development to follow the steps as instructed in the design model. This model uses the 5 stages of development namely:

1. *Analysis* (Analysis)

The analysis is meant here is the analysis of the needs which penelitimenentukan objectives of the program or product developed. Needs analysis is a constructive and positive tool for change. What is meant by a change here is not a radical change to be unfounded, but the changes are based on the logic of rational, functional changes which can meet the needs of citizens, groups and individuals.[21]Three important steps undertaken by innovative teachers in preparing development plans include elements of needs analysis inserted between the election materials to the selection of learning strategies. For more details, see the chart below:[22]

What is developed?	Why develop we develop?	How to develop it?
(Aim)	(Needs Analysis)	(How / Media)

[21]Suharsimi Arikunto and Cepi Safruddin Abdul Jabar, *Evaluasi Program pendidikanPedoman praktis teoritis untuk siswa dan praktisi pendidikan edisi kedua* (Jakarta: Aksara, 2009), hlm. 72..

[22]*ibid*,. 73.

2. *Design* (Designing)

Design is the second step, and based on what has been formulated in the analysis stage. Here is a stage-tahapn design:

a. Determine and collect the data related to the implementation of media development, include: the subject matter and the specific goals of learning. Eplajaran material obtained from learning mentions the theme of the subject through a guide book. This is to be a reference to the development of instructional videos for the better.

b. Make instructional media design. At this stage determine the design of instructional materials that will be created. Preparation of instructional videos that will be made constantly consulted with experts who have been determined to find out the development plan in accordance with the targets to be achieved in the study.

3. *Development*

This stage is the stage of the production or manufacture of the media based on the design of products that have been done before. In this stage should pay attention to the following:

a. Studying the materials developed character, which has been known in the needs analysis process. As well as finding solutions to the appropriate media to support the learning process on materials developed, so as to create a new learning environment as well as provide insights into the students more which leads to a real experience.

b. Designing the learning process so that students have an interest to learn the materials developed. Students are given a different learning experience using media that has been designed and developed media to consult the competent expert in the field.

c. Repack the product, a product that has been developed has been revised and has been validated by experts and practitioners. Development made its appearance and activities of interest to students. Moreover, given an instruction manual to be more effective in using the media developed it.

4. *Implement*

At this stage, product development has been completed with the approval of the validator. Implementation of the learning is done in class VI (class test)ie by examining cobakan product yields. Experimental activities conducted to collect data on the effectiveness and efficiency of learning media material geometrical volume. The activities of these trials were also conducted to determine whether the product is worth the learning media is used as a companion instructional video on the material in a vegetative propagation artificial plants. To determine differences in learning outcomes before and after this teaching material, then the developers to test the sixth grade of primary school who examined using instructional videos proliferation of plants in vegetative artificial and provide about pre-test and post-test to differentiate before and after the use of teaching materials developed.

At this stage, the products developed will be validated by experts concerned that learning science expert, an expert content or subject material science, design

experts, and practitioners. Where the products developed will be revised based on the results of the validation there. Having considered appropriate then the products developed will be applied to determine the effectiveness of the test subject through field trials.

5. *Evaluation*

During the final stage, will be evaluated on students. The evaluation was done by conducting tests to measure the effect of the use of the media developed in improving the understanding of students seen through the increase in learning results. Based on the above exposure, researchersusing a test instrument ratings as a measure of student learning outcomes before and after the use of the media developed as follows:

a. pre Test

Is a test given by researchers to the student before the media developed using the product. This is done to determine the level of student understanding before the use of the media developed.

b. Post Test

Is a test given by the research in the students after using the products developed media. This is done to determine the extent of the influence of the media developed on students' understanding of the material in a vegetative propagation artificial plants.

D. Product Test

Test the product is intended to collect data that can be used as a basis to establish the level of effectiveness, efficiency, and / or appeal of the product. The test product was divided into two as follows:

1. TestExpert

Expert test conducted to determine the level of attractiveness of the validity and validation of products utilized to determine validas of products that have been produced. validator in this research is the subject matter experts, expert design and learning practitioners.

a. Validation content expert

which controls learning. The qualified experts in this study are;

1) Mastering the material characteristics
2) Has a depth of knowledge regarding the product being dikebangkan.

b. Validation of design experts

Experts set design to test the validity of instructional video products, basically have the same criteria with subject matter experts but expert learning content must have the ability in the field of instructional design.

c. practitioners learning

Practitioners of this learning is one of the testers level of validity of the product materials. As for learning practitioners qualifications are as follows:

1) Teachers are teaching institution level SD / MI.
2) Have experience in teaching.

3) Willing as an instructional video product tester for data acquisition development results

Lankah associated with measures undertaken in a review of learning practitioners as well as expert reviews the content and instructional design experts.

2. Field Trial

These field trials conducted in Class VI MIN 6 Jembrana, the number of students studied were 32 students who were attending the learning material artificial vegetative propagation. Subject product trials aim to determine whether the products reach the goal.

E. Types of Data

The type of data in the study of this development, in the form of quantitative data and qualitative data[23], Types of data collected tailored to the information needed about the products that will be developed and pembelajran objectives to be achieved. The data used as a basis to find the effectiveness, efficiency and attractiveness of the product.

1. Quantitative data obtained from the scoring form of a percentage through expert assessment questionnaire content, design experts, practitioners learning, and student learning outcomes. Are as follows:
   a. Assessment expert content and instructional design textbook about ketepan components. The precision components of the textbook include: austerity content, accuracy cangkupan, use of language, illustration and completeness

[23] Wahid Murni dan Nur Ali, *Penelitian Tindakan Kelas Pendidikan Agama dan Umum Dari Teori Menuju Disertai Contoh Hasil Penelitian (* Malang : UM Pres, 2008)

of the packaging other components that can be used as instructional videos to make them more effective.

b. Rate practitioners learning about the completeness of the materials, systematic description, language, instrument, and the use of teaching materials.

c. Student learning outcomes before and after using video learning science.

2. Qualitative Data

Information obtained through interviews with subject teachers. Input, feedback and suggestions for improvements based on the results of expert assessment obtained through interviews or consultations with expert content, instructional design experts and practitioners learning.

F. Data Collection Instrument

The instrument used to obtain the expected amount of data that the instrument used to obtain the expected amount of data that will be used as an instrument of data collection in the form of interviews, questionnaires, and tests the acquisition of learning outcomes.[24] Following the exposure of the data collection instruments:

1) Questionnaire

Questionnaire was used to collect data about objects feedback and suggestions from the trial, then used the revision. The questionnaire required are as follows:

a) Questionnaire responses expert assessment and learning science.

b) Questionnaire design expert assessment and response

[24]Fitratul Uyun, "*Belajar bahan pengajaran pengembangan Hadis Al Qur'an dengan Humeneutik pendekatan untuk kelas V MIN 1 Malang", "Tesis",* (Malang: lulus Program di Universitas Islam Negeri MalangTesis", (Malang: lulus Program di Universitas Islam Negeri Malang).

c) Questionnaire Penialain or student feedback through field trials (field evaluation)

d) Questionnaire assessment and response MIN Gilimanuk sixth grade teacher.

2) Interview

Resultinterviews are used to supplement data obtained through a questionnaire. The interview itself is done on some sixth grade students and teachers MIN 6 Jembrana and experts concerned.

3) *Test*

The test is used to collect data on post-test results that show the effectiveness of student learning after using instructional media approach to learning science process skills.[25] The tests used in the research development of instructional media in a. Vegetative plant material artificial breeding are:

a) *Pre-test*

b) *Post-test*,

*Pre-test*is performed to measure the ability of students prior to the use of the media developed. Post-test was used to measure the ability of students after using the dikembang media. This is to determine the effectiveness of the media developed.

G. Data Analysis Technique

There are three analytical data used to manage the resulting data and the results of the product pegembangan content analysis, descriptive analysis and test analysis.

[25]Arief Furchan, *Pengantarpenelitian di pendidikan* (Yogyakarta: Student Library, 2007), hlm. 483

1. Analysis of learning content

This analysis was conducted to measure the achievement of thematic learning objectives based on standards and basic competencies and managing organizational learning content. Thus the results of this analysis served as the basis for developing science teaching video.

2. Descriptive analysis

The analysis is performed at the time of the trial, the data retrieved from the assessment questionnaire to give criticism and advice, and include fixes.

The results of this descriptive assessment is used to determine the level of attractiveness of the product results in the form of development of science teaching sixth grade video. Measurement data media eligibility formula used to analyze the results of validation techniques the average value calculation.

The percentage formula used in the study is the development of products as follows:

$$P = \frac{\sum x}{\sum x\, i} \times 100$$

Information:

P = Feasibility

$\sum x$ = Number of answers ratings

$\sum xi$ = Number ultimate answer

The results obtained from the calculation of the percentage then sitentukan feasibility level instructional video products. As for how to determine the feasibility of teaching materials can menggnakan achievement level scale conversion follows:[26]

Table 3.1

Qualification Level Eligibility By Percentage

Percentage (%)	***Qualification***
90-100	*Very interesting*
75-89	*interesting*
65-74	*Quite interesting*
55-64	*Less attractive*
0-54	*Not attractive*

Based on the above table is said to attract votes if eligible attainment of all ages 65-100 milai contained in the questionnaire assessment materials experts, media specialists, experts pembelajran, and students. Assessment must meet the criteria of interest. If the criteria is not feasible then be revised to achieve interesting criteria.

3. Test analysis

Mechanical analysis of students' test results using pre-test and post-test. After that, to calculate the level of the comparison of student learning outcomes before and

[26]Sugiono, *Metode Penelitian Kuantitative, Kualitatif and R & D*, (Bandung: CV Alfabeta 2008) hlm. 135

after using the media with the formula mean (average) and reinforced formula T-test with a significance level of 0.05% is:[27]

(1) *mean* (average)

Analysis techniques to determine the mean of the pre-test and post-test mean of the following formula:[28]

$$Mean\ (D) = \frac{\sum x}{n}$$

Information :

mean = The average obtained from the use of the above formula.

$\sum x$ = Number of values *pre-test* or *post-test*

n = Number of samples.

(2) T-test

Data analysis techniques using Dependent Sample Test. Criteria for the test is a test-T on Dependent Sample Test. The formula used with a significance level of 0.05% is:[29]

$$t = \frac{d}{\sqrt{\frac{\sum d2 - \frac{(\sum d2)}{n}}{n\,(n-1)}}}$$

Information :

t = Test-T

d = Different (X_1 - X2)

d2 = Variance

[27]Subana, et al. *Statistik Pendidikan* (Bandung: Pustaka Setia, 2005), hlm. 131-132.
[28]Zen Amiruddin, *Statistik Pendidikan*, (Yogyakarta: Terrace, 2010), hlm. 73.
[29]*ibid*, hlm. 75.

N = Number of samples.

Thus, if the result is <0.05%, the final result is meaningful or influential. But if the results perhitungnan ≥ 0.05%, the final result is not meaningful or influential

CHAPTER IV

THE RESULTS OF THE DEVELOPMENT

In this chapter will be displayed 3 related things with chapters consisting of (a) a description of the form of the materials, (b) the presentation of data to test, in a presentation of trial data will be discussed about the results of the implementation of the test product, (c) contains a discussion of data analysis linked data product trial results and final conclusions the results of the analysis as the basis for performing the revision of the product, and (d) a revision of the assessment of the product based on the input and input from the now kemenarikan by students in class experiments.

A. The Description of The Video Learning Development of Vegetative Propagation

A description of the results of this development in the form of video learning development on artificial vegetative for class VI elementary school. The study of the product materials are reviewed from two aspects, namely, the aspect of the content of the materials and the design of learning materials. Aspects of the content of the learning materials are compiled based on the results of the analysis of the learning component of the IPA class VI, design aspects materials adapted to the character of the elementary school students especially the class VI.

A description of the results of vegetative propagation video. Video learning on vegetative propagation describe various of the artificial breeding of plants vegetatively (cuttings, grafting, green and enten) and how to do artificial

breeding plants vegetatively such. This video is dilengkpi with the voice belongs to the media and the developer on the steps in the perform the methods in plant breeding is given a subtitle so that makes it easy for students to understand the content of the video.

The result of the video learning the artificial breeding of vegetatively plants are:

1. The opening of the video learning media on vegetatif propagation.

Figure 4.1 the opening of artificial vegetative learning video

Opening on artificial vegetative beisikan learning video about the introduction of learning that will be done at the time, and give a little explanation of what is meant by artificial vegetative propagation.

2.Video content learning in artificial breeding of the plant vegetatively.

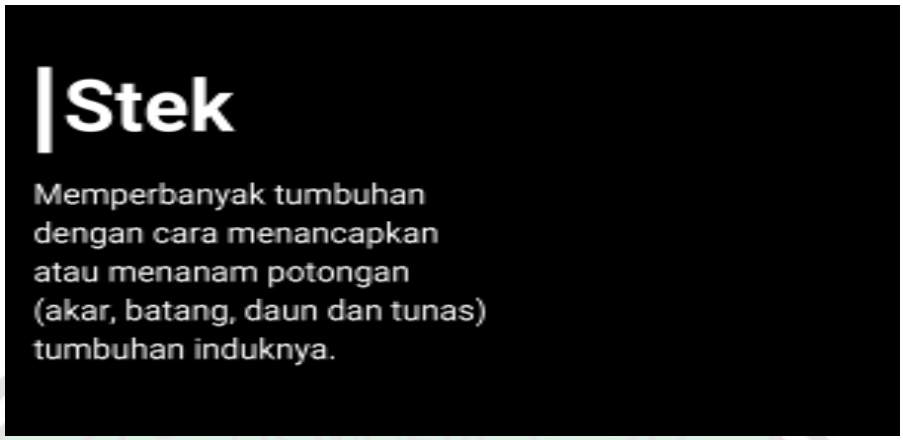


Figure 4.2 cutting (stek)

Figure 4.3grafting (mencangkok)

Figure 4.4 Joining (mengenten)

4.5 Sticking (okulasi)

B. The Presentation of The Data Field Trial Results

Before he did, field trials, results of product development needs to be divalidasikan to the experts to find out the feasibility of the product before use in the field. Validation products rated ari in terms, namely three in terms of content, design and learning. After validation, performance of the product will be derevisi in accordance with its shortcomings, critique, and suggestions from

the validator. After completion of revision products ready to be used for field test.

Field test conducted in class VIA class VIB and MIN 6 Jembrana on 19 March to 23 March 2018. Researchers conducting a pretest before doing the test on class VIA and classVIB MIN 6 Jembrana. The purpose of the implementation of the pretest is to know its homogeneity control classes and experiments. Its homogeneity is required to find the influence of the product against the students. Field test data gathered from the expert content validation, design experts, expert eyes learning, results from pretest class control and experimentation, as well as the results of the control and class posttest experimental class. The next stage is the assessment of kemenarikan products by students. Judgment, criticism and suggestions from the validator and the students come in handy for the final revision of the product so that the product is more feasible and effective to be used as learning materials. the results of the assessment of students consisting of pretest and posttest will be used as the data for the knowing the influence and use of the product against the perestasi of learning in students using the test T.

1. The Results of The Validation of The Product Development of Video Learning Vegetative Propagation

Data obtained in this study there sorts of quantitative data i.e., du and kualitatf. Decree diproleh of data through two stages namely validation experts and field trials.

a. Validation of content

Product development submitted to the expert content in the form of video learning tumbuhans breeding artificial vegetative ecara to elas VI MIN 6 Jembrana filed through questionnaire method now with the instrument to produce quantitative data and qualitative.

1) Quantitative Data

Quantitative data results of validation experts more content can be seen in table 4.1. as follows:

Table 4.1the results of the validation of the product's content experts

No.	Declaration	x	x_i	P (%)	Rate of Validity	Desc.
1.	The outline of topics in the development of instructional video on artificial vegetative propagation in accordance on artificial vegetative material	4	5	80	Valid	Not Revised
2.	The relevance of the basic competencies and indicators on the video learning on artificial vegetative propagation	4	5	80	Valid	Not Revised
3.	The suitability of the material presented in the concept video learning on artificial vegetative propagation	5	5	100	More Valid	Not Revised
4.	Kemenarikan material by using video learning on artificial vegetative propagation	4	5	80	Valid	Not Revised
5.	The scope of the material	4	5	80	Valid	Not

	presented in the video learning artificial vegetative propagation in accordance with learning objectives					Revised
6.	Video learning on artificial vegetative propagation can make it easier for students to understand the artificial vegetative material	5	5	100	More Valid	Not Revised
7.	Video learning artificial vegetative propagation on the right is used in the study of artificial vegetative material	5	5	100	More Valid	Not Revised
Amount		31	35	89	More Valid	Not Revised

Description:

X: Score the answers by validator Mr. Ahmad Abtokhi, M.Pd expert the contents materials products

X_1: Score the highest answer

P: Percentage rate kevalidan

Based on the results of the quantitative data on exposure to the validator by the content against the learning materials developed in table 4.1, then a percentage of the calculated rate of kevalidan learning materials are developed as follows:

$$P = \frac{\Sigma x}{\Sigma x_i} \times 100\%$$

$$P = \frac{31}{35} \times 100\% = 89\%$$

The total score obtained from validation of content experts is 31 points with maximum score is 35. So the content validation results tally is 89% and was declared valid and worthy of use.

2) The Qualitative Data

As for the quantitative data collected from the input, advice and expert commentary of content in an open statement with regard to video pembelajran that there are some points that need to be corrected for the consummation of learning materials, among which are:

a) The definition of the cuttings should be clarified

b.Validation Of Media

Product development was handed over to experts of the media in the form of video learning artificial breeding plants vegetatively to elas VI MIN 6 Jembrana filed through questionnaire method now with the instrument to produce quantitative data and qualitative.

1) Quantitative Data

Quantitative data results more media expert validation can be seen in table 4.2. as follows:

Table 4.2the results of the validation of the product media expert

No.	**Declaration**	***X***	x_i	**P (%)**	**Rate of Validity**	**Desc.**
1.	Packaging design Kemenarikan media learning artificial breeding plants vegetatively	4	5	80	Valid	Not Revised
2.	Clarity of illustration in video	4	5	80	Valid	Not

	learning on artificial vegetative propagation					Revised
3.	Yangdigunakan color usage in video learning on artificial vegetative propagation	3	5	60	quite Valid	Not Revised
4.	Video learning on artificial vegetative reproduction of attracting students to learn	4	5	80	Valid	Not Revised
5.	The ease of use of the video learning system on artificial vegetative propagation	4	5	80	Valid	Not Revised
6.	Video learning on artificial vegetative breeding can help students understand the artificial vegetative material	4	5	80	Valid	Not Revised
7.	Security of baha is used on video media learning in artificial vegetative propagation	4	5	80	Valid	Not Revised
8.	This medium complies with artificial vegetative material	4	5	80	Valid	Not Revised
Amount		31	40	78	More Valid	Not Revised

Description:

X : Score the answers by Mr. Yuniar setyo Marandy S.Sn as an expert media materials

X_1: Score the highest answer

P: Percentage rate kevalidan

Based on the results of the quantitative data on exposure to the validator by the content against the learning materials developed in table 4.2, then a percentage of the calculated rate of kevalidan learning materials are developed as follows:

$$P = \frac{\Sigma x}{\Sigma x_i} \times 100\%$$

$$P = \frac{31}{40} \times 100\% = 78\%$$

The total score obtained from validation of content experts is 31 points with a score of maximum is 40. So the content validation results tally was 78% and was declared valid and worthy of use.

2) The Qualitative Data

As for the quantitative data collected from the input, advice and expert commentary on media in an open statement with regard to video pembelajran that there are some points that need to be corrected for the consummation of learning materials, among which are:

a) Part of the opening video is made horizontally

b) Writing should be equated in every material

c) The use of color to be adjusted

c. Expert Practitioners

Product development submitted to the expert practitioners in the form of video learning artificial breeding plants vegetatively to elas VI MIN 6 Jembrana filed through questionnaire method with instrument data resulting in a question form quantitative and qualitative.

1) Quantitative Data

Quantitative data results validation expert practitioners more information can be seen in table 4.3. as follows:

Table 4.3the results of a validation expert practitioner products

No.	Declaration	*X*	x_i	P (%)	Rate of Validity	Desc.
1.	Video learning artificial vegetative propagation of plants seacara easy to use learning activities	5	5	100	More Valid	Not Revised
2.	Video learning artificial vegetative propagation on the right are used in learning in particular on artificial vegetative meteri	5	5	100	More Valid	Not Revised
3.	Video learning artificial vegetative propagation in practical use in the learning activities	4	5	80	Valid	Not Revised
4.	Video learning interesting artificial vegetative propagation on the motivation of students in learning activities	4	5	80	Valid	Not Revised
5.	Video learning on artificial vegetative propagation efficiently used in learning activities	5	5	100	More Valid	Not Revised
6.	Video learning on artificial vegetative propagation can make	5	5	100	More Valid	Not Revised

	it easier for students to understand the artificial vegetative material					
Amount		28	30	93	More Valid	Not Revised

Description:

X : Score the answers by the validator's Mrs. Istianik, S.Pd as skilled practitioners of learning materials

X_1 : Score the highest answer

P : Percentage rate kevalidan

Based on the results of the quantitative data on exposure to the validator by the content against the learning materials developed in table 4.3, then a percentage of the calculated rate of kevalidan learning materials are developed as follows:

$$P = \frac{\Sigma x}{\Sigma x_i} \times 100\%$$

$$P = \frac{28}{30} \times 100\% = 93\%$$

The total score obtained from validation of content experts is 28 points with the maximum score is 30. So the acquisition of content validation results were 93% and was declared valid and worthy of use.

2. The Qualitative Data

As for the quantitative data collected from the input, advice and comments in an open statement to media practitioners regarding video learning that there are some points that need to be corrected for the consummation of learning materials, among which are:

a) Correct use of capital letters

2.Interesting of Video Lerning Media on Vegetative Propagation

Kemenarikan learning materials are assessed by students using the now assessment. Appraisal question form consists of 6 questions. Now given for the students classes VIA MIN 6 Jembrana by number of 32 students. Following the results of the data assessment of interesting materials by grade VI MIN 6 Jembrana:

Table 4.4the results of the assessment of interesting by video learning grade students VIA MIN 6 Jembrana

No.	Declaration	X	x_i	P (%)	Rate of Validity	Desc.
1.	Do you guys enjoy learning using learning Video breeding artificial plants vegetatively	122	128	95	Interesting	No Revision
2.	Whether with video media learning the artificial breeding of vegetatively plants can provide spirit in learning	125	128	97	Interesting	No Revision
3.	Whether with video media learning the artificial breeding of vegetatively plants are easy to use in the study of artificial vegetative material	126	128	98	Interesting	No Revision
4.	Whether with video media learning breeding plants vegetatively-made it interesting to study artificial	121	128	94	Interesting	No Revision

	vegetative material					
5.	Whether with video media learning the artificial breeding of vegetatively plants can make it easier for you guys to understand the artificial vegetative material	122	128	95	Interesting	No Revision
6.	Usage instructions are available on this pembelajatran clear media	121	128	94	Interesting	No Revision
Amount		737	768	95	Interesting	No Revision

Description:

X : Score the answers by grade VI MIN 6 Jembrana

X_1 : Score the highest answer

P : Percentage rate kevalidan

Based on exposure to quantitative data from the results of the assessment against the interesting video learning developed in table 4.4, then a percentage of the calculated rate of kevalidan video learning developed as follows:

$$P = \frac{\Sigma x}{\Sigma x_i} \times 100\%$$

$$P = \frac{737}{768} \times 100\% = 95\%$$

Based on the above calculation then the validation performed by the students of the whole reach 95% then, video learning included in categories of interest.

3.The Results Of The Assessment Of Learning

At this stage of the assessment of the stage of field trials, researchers used two class as a comparison that is, the class VIA the class asexperiments and class VIB as a control class. Classroom experiments were given treatment that is use video learning learning the artificial breeding of vegetatively plants, while the class of 2013 curriculum Book control using Kemendikbud issue. From implementation and posttest petest each class class class i.e. the control experiments and retrieved data values. The value of the pretest use its homogeneity test is analyzed to show that two elompok sempel data derived from a population that has the same variansi. Next pnungkatan the results of the study will be used to identify the influence of usage of video learning towards student achievement, for it is necessary to know the mean, variance, its homogeneity and test T. As for results from pretest and posttest on classes VIA and VIB MIN 6 Jembrana are as follows:

Table 4.5 Value pretest classes VIA and VIB

VIB TANKETTES (Control Group)			**VIA (Experiment Group)**		
No.	**Students Name**	**Value**	**No.**	**Students Name**	**Value**
1.	Achmad Ferdy Nurikhsan	25	1.	Achmad Fauzigustian	75
2.	Ade Maulana Nurrochman	35	2.	Adit Prasetya putra	80
3.	Ade Purta Mahardika	35	3.	Afiqa Putri Fatina	75
4.	Agustina	30	4.	Agninda Yudiasna Hidayah	80
5.	Agustini	20	5.	Ahmad Nabil Purnama	85
6.	Ahmad Jaelani	30	6.	Aisha Aulia Indriyani	80
7.	Akhmad Fauzan Zidan	35	7.	Amelia Dewi Nur Hasanah	80

8.	Ahmad Naufal Zaky	45	8	Avirana Nabilah	85
9.	Ahmad Zainur Rizki	40	9.	Beta Risqi Salsabilah	85
10.	Bintang Dwi Saputra	30	10.	Dhiyaa Nisaa Mufidahh	60
11.	DzakyAriendra Dhaifullah Yulianto	35	11	Dicky Julianto	80
12.	Eka Nur Firmansyah	25	12.	Dimas Arhman Prayoga	85
13.	Giant Renita Agustin	30	13.	Diah Indri Wahyu Astuti	75
14.	Gita Adistya	45	14.	Fadila Febriansyah	85
15.	Jholeo Riyan F	35	15.	Febri Hendik Pratama	80
16.	Mevia Suratin	30	16.	Ita Juwita Wanda	30
17.	Muhamad Agung Dana Laksamana	45	17.	Javid Namah	75
18.	MuhammadAlfarizy Kurniawan	60	18.	Jahrotul Umroh	80
19.	Niken Novia Anggraeni	25	19.	Khaira Naisha Narulita Hans	85
20.	Nokia Danda Subakti	35	20.	Muhammad Ariel Zulvikri	75
21.	Novel Mulhamul Elmi	40	21.	Nazwa Nur Salsabila	80
22.	Oktavia Nanda Pranata	45	22.	NeydhaAlisa	55
23.	Parhansyah	40	23.	Nisa Apriliya	80
24.	Ridanar Permana Putra	45	24.	Nur Vica Aini	75
25.	Riyanto	70	25.	Rachmad Budiman	70
26.	Rizal Adi Saputra	20	26.	Rizki Hardiyansyah	75
27.	Sandra Adi Laksita	30	27.	Sabila Zahro Rohani	80
28.	Siti Noer Kholifah Samph	25	28.	Sabila Zahra Rohati	75
29.	Vivi Jihan Pangesti	35	29.	Sanjaya Ardhi	90

				Maullana	
30.	Widiana Prasetya	40	30.	Saskia Amelia Putri	40
31.	Yasmin Rahmadani	35	31.	Selvi Aulia	60
32.	Zaki Satiawan	40	32.	Yusti Hidayah	80
The Number Of Values		1155	The Number Of Values		2395
Average		36.09	Average		74.84

Table 4.6 the value class posttest VIA and VIB

VIB (Control Group)			**VIa (Experiment Group)**		
No.	**Students Name**	**Value**	**No.**	**Students Name**	**Value**
1.	Achmad Ferdy Nurikhsan	75	1.	Achmad Fauzigustian	75
2.	Ade Maulana Nurrochman	45	2.	Adit Prasetya Putra	90
3.	Ade Putra Mahardika	70	3.	Afiqa Putri Fatina	85
4.	Agustina	70	4.	Agninda Yudiasna Hidayah	95
5.	Agustini	65	5.	Ahmad Nabil Purnama	90
6.	Ahmad Jaelani	65	6.	Aisha Aulia Indriyani	100
7.	Akhmad Fauzan Zidan	45	7.	Amelia Dewi Nur Hasanah	90
8.	Ahmad Naufal Zaky	70	8	Avirana Nabilah	90
9.	Ahmad Zainur Rizki	55	9.	Beta Risqi Salsabilah	100
10.	Bintang Dwi Saputra	55	10.	Dhiyaa Nisaa Mufidahh	90
11.	Dzaky Ariendra Dhaifullah Yulianto	70	11	Dicky Julianto	90
12.	Eka Nur Firmansyah	70	12.	Dimas Rahman Prayoga	100
13.	Giant Renita Agustin	60	13.	Diah Indri Wahyu Astuti	90
14.	Gita Adistya	80	14.	Fadila Febriansyah	85
15.	Jholeo Riyan F	70	15.	Febri Hendik Pratama	95

16.	Mevia Suratin	85	16.	Ita Juwita Wanda	85
17.	Muhamad Agung Dana Laksamana	65	17.	Javid Namah	95
18.	Muhammad Alfarizy Kurniawan	60	18.	Jahrotul Umroh	95
19.	Niken Novia Anggraeni	65	19.	Khaira Naisha Narulita Hans	100
20.	Nokia Danda Subakti	60	20.	Muhammad Ariel Zulvikri	90
21.	Novel Mulhamul Elmi	65	21.	Nazwa Nur Salsabila	100
22.	Oktavia Nanda Pranata	60	22.	NeydhaAlisa	80
23.	Parhansyah	50	23.	Nisa Apriliya	95
24.	Ridanar Permana Putra	75	24.	Nur Vica Aini	90
25.	Riyanto	75	25.	Rachmad budiman	90
26.	Rizal Adi Saputra	55	26.	Rizki Hardiyansyah	100
27.	Sandra Adi Laksita	65	27.	Sabila Zahro Rohani	95
28.	Siti Noer Khalifah Samph	60	28.	Sabila Zahra Rohati	90
29.	Vivi Jihan Pangesti	65	29.	Sanjaya Adhi Maullana	95
30.	Widiana Prasetya	60	30.	Saskia Amelia Putri	80
31.	Yasmin Rahmadani	75	31.	Selvi Aulia	85
32.	Zaki Satiawan	70	32.	Yusti Hidayah	100
The Number Of Values		2075	The Number Of Values		2930
Average		64.84	Average		91.56

a. Mean

The mean or average value derived by the control class and experiment of pretest and posttest on the table above are as follows:

1) Control Class

Pretest : $\frac{\Sigma}{n_1} = \frac{1155}{32}$ = 36,09

Posttest : $\frac{\Sigma}{n_1} = \frac{2005}{32}$ = 62,66

2) Classroom Experiments

Pretest : $\frac{\Sigma}{n_2} = \frac{2365}{32}$ = 73,91

Posttest : $\frac{\Sigma}{n_2} = \frac{2910}{32}$ = 90,94

b. Variant(S^2)

After an average was calculated, the next variant is calculated to know the distance the spread against the mean score. The variance in the data is as follows:

Table 4.7 Statistical Data Varians Test

Statistics					
		Pretest experiment class	Pretest the control class	Ekperiment class Posttest	Postets class control
N	Valid	32	32	32	32
	Missing	0	0	0	0
Mean		74.84	36.09	91.56	64.84
Variance		168.52	110.86	42.64	86.27

c.Homogeneity

The T-test formula to determine then ever before need to know its homogeneity test with datadilakukan with the largest variant of the formula F divided by the smallest variance. Then the results $F_{arithmetic}$compared to theF_{table}. In this

case when $F_{arithmetic}$ less than or equal to F_{table} then the data is said to be homogeneous. Following the results of the test of its homogeneity:

Table 4.8 Pretest and Posttest its homogeneity Control Class and class experiment

	F calculate	F table	Description
Pre test	F= $=\frac{168,52}{110,86}$ = 1,52	2.04	homogeneous
Posttest	F= $=\frac{86,27}{42,64}$ = 2,02	2.04	homogeneous

As a result of its homogeneity test pretest and posttest data is the variance are homogeneous with the results $F_{arithmetic} < F_{table}$ i.e. $F_{arithmetic}$ obtained of 2.02 while F_{table} amounting to 2.04

The next test of its homogeneity on postest control classes and experiments obtained results $F_{arithmetic} < F_{table}$, with $F_{arithmetic}$ obtained amounted to 1.52 while F_{table} amounting to 2.04.

d.Test t

Ha :there is the influence of the use of video learning media on vegetative propagation toward student achievement classroom VI MIN 6 Jembrana.

Ho : no influence of the use of video learning media on vegetative propagation toward student achievement classroom VI MIN 6 Jembrana.

The T-test is used to find out the influence of the use of the product in class alphabets experiment. Have been known to bahnwa sample jmlah sample number was known to use the same i.e. alphabets experiment class amounted to 32 students and classroom control amounted to 32 students. The following formula is used:

Detected :$\bar{X}_1$ = 64,84n_1= 32 S_1^2 = 86,27

$\bar{X}_2$ = 91,56 n_2= 32 S_2^2 =42,64

$$S^2gab = \frac{(n_1-1)S_1 2 + (n_2-1)S_2 2}{n_{1+}\, n_2 - 2}$$

$$S^2gab = \frac{(31)86,27+(31)42,64}{32+32-2} = \frac{(2.674,37)+(1.321,84)}{62} = 64,455$$

$$T_{arithmetic} = \frac{(\bar{X}_1 - \bar{X}_2)-(\mu_1 - \mu_2)}{\sqrt{\frac{s^2_{gab}}{n_1}+\frac{s^2_{gab}}{n_2}}}$$

$$= \frac{|(64,84-91,56)|-0}{\sqrt{\frac{64,455}{32}+\frac{64,455}{32}}} = |-13,75|$$

As for the results of a calculation $T_{arithmetic}$is -13.75 while T_{table} amounted to 2.045. So $T_{arithmetic} > T_{table}$, and Ha accepted and Ho rejected.

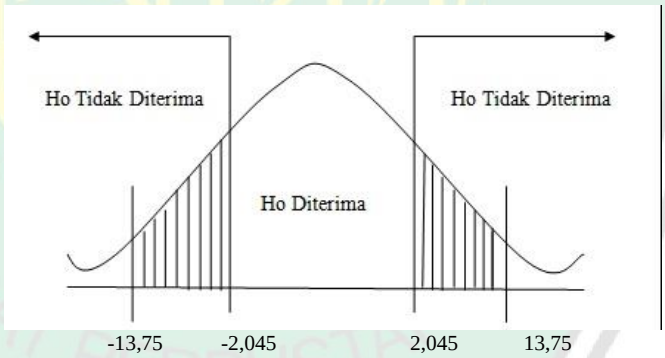


Figure 4.6 hypothesis test curve

Can be seen in the picture above that the results of the T test calculation are found in the area where Ho is rejected. So it is known that there is an influence of the use of video learning media on vegetative propagation to improve learning achievment on the material of the artificial breeding of the plant vegetatively.

C. Data Analysis

Data analysis was done on data that has been processed at the presentation of the data. The data to be analyzed is the data obtained from expert content validation, validation, validation of the design experts of the expert study, assessment of students as well as the value of attractiveness and pretest postest grade VIA and VIB and results of statistical tests. The purpose of this analysis is to find out the kevalidan, the attractiveness and the effectiveness of learning materials developed. Data analysis will be divided into 5 sub i.e. (a) a description of the product being developed, (b) video learning development process, (c) analysis of data validation, (d) data analysis assessment of interesting materials, (e) the analysis of the results of student learning. Following the exposure of data analysis from the research and development of learning materials in the form of video learning in artificial vegetative plant breeding.

1. Product Description Developed

Product development is a result of learning materials in the form of video learning breeding plants vegetatively. Materials showing the competence that should be mastered by students.Achievements of study on student achievement was the beginning competencies of students.

To improve student learning pretasi must be supported with the use of learning materials interesting and with a variety of activities are increased. Learning materials in the form of plant breeding learning videos are especially appropriate artificial vegatatif is used to help students of classes VI to understand the material to be conveyed.

Video materials on breeding plants vegetatively artificial contains about how to conduct the activities of grafting, cuttings, enten and green. Video learning media on vegetative propagation has a video lenght of six minutes thirty seconds and video learning media on vegetative propagation come with subtitles and sound abaut material from media developers in order to facilitate students in understanding the content of the video.

2. Video Learning Development process

In this research use ADDIE an development model. It contains about Analysis, Desain, Development, Implemenattion and Evaluation. Follow the product development steps. This model can be used for various forms of product development as a model, learning strategies and learning materials, the average.[30]The first step of researchers looking for information about the curriculum is used in the field. Then analyze what is required by the student and do the next step. Media design to help improve student acchievment. After product design, validation through discussions with experts and scholars, it will be known to his weaknesses. The next attempt disadvantage decreases by design repair.[31] The expert who do validation in this research are 3 experts. They are sains learning expert, sains expert and desain media expert. After validate from the expert and practitioner, the media will get some advice from them and get some revision until ready. Then, the media implement to the student to know about the effectiveness and attractiveness. After that, the effectiveness and

[30]Aan Hendroanto, *Model Pengembangan ADDIE*(http://aan hendroanto.blogspot.com/2012/10/model-pengembangan –addie_28.html, dikses 23 Juli 2018 jam 08:43 WIB).
[31]Sugiono, *Metode Penelitian Pendidikan*,(Bandung: Alfabeta,2015), hlm. 414.

attractiveness of media will get from different learning achievment of posttest between control and experiment group sixth grade.

3. Analysis of Data Validation

Implementation of validation of learning materials in the form of video learning the artificial breeding of vegetatively plants done by 3 validator, i.e. expert expert content, design, and expert instruction. Validation is used to measure the feasibility of a product. The following is an analysis of exposure data from each of the experts:

a. Analysis Of Validation of Content Experts

Description of exposure data validation results video learningmedia on vegetative propagation are as follows:

(1)The outline of topics video learning media on vegetative propagation vegetative material in accordance with.

(2) The level of revelansi video learning media on vegetative propagation with core competencies (KI) and Basic Competence (KD) in the category either.

(3)The suitability of the concept of the video learning media on vegetative propagation fits very well.

(4) Video learning media on vegetative propagation presented very well and accordingly.

(5)The scope of the video presented at the study of media on vegetative propagation in accordance with artificial vegetative material.

(6)Video Learning media on vegetative propagationmade very well to facilitate students in understanding artificial vegetative material.

(7)Video learningmedia on vegetative propagation particularly suited to use for breeding material plant vegetatively.

Based on the results of the now charging by artificial vegetative content experts, namely, Mr. Ahmad Abtokhi, M.Pd generates a level of kevalidan as follows:

$P = \frac{31}{35} \times 100\% = 89\%$

In accordance with the conversion table of scale, a percentage of the level of achievement of the 83% are on valid qualifications so that the materials do not have to do revision. This suggests that the learning materials in the form of video learning artificial breeding of vegetatively plants is already good and worthy to be used according to the contents.

b.Analysis of Validation of Design Experts

Description of exposure data design validation results video learning the artificial breeding of vegetatively plants are as follows:

(1)Level kemenarikan learning video materials design media on vegetative propagation in the category either.

(2)Clarity of illustration materials video video learning media on vegetative propagation l in the category either.

(3)The use of color in the selection of video learning media on vegetative propagation are already good enough.

(4)Video learning video media on vegetative propagation is already menerik to be able to attract students to learn.

(5)Video learning media on vegetative propagation is very easy to use.

(6)Video learning media on vegetative propagation in a category is good for the student in understanding memebantu vegetative material.

(7)The security level of the materials used in video learning media on vegetative propagation in a category are safe to use.

(8)Video learning video media on vegetative propagation of vegetatively highly artificial vegetative material in accordance with.

Based on the results of the now charging by artificial vegetative namely media expert, Mr. Yuniar Setyo Marandy, S.Sn producing rate of kevalidan as follows:

$P = \frac{31}{40} \times 100\% = 78\%$

In accordance with the conversion table of scale, a percentage of the level of achievement of the 78% are on valid qualifications so that the materials do not have to do revision. This suggests that the learning materials in the form of video learning artificial breeding of vegetatively plants is already good and worthy to be used according to the design.

c. Analysis of Expert Validation of Learning

Description of exposure data validation of learning outcomes learning video plant vegetatively artificial breeding is as follows:

(1)Video media on vegetative propagation is very easy to use in learning.

(2)Video learning media on vegetative propagation highly precise vegetative material used to brew.

(3)Video learning media on vegetative propagation highly practical use in the learning activities.

(4)Video learning media on vegetative propagation is already well dignakan to attract the students ' motivation in learning.

(5)Video learning media on vegetative propagation vegetatively highly efficient use in learning.

(6)Video learning media on vegetative propagation greatly facilitates students in understanding artificial vegetative material.

Based on the results of charging the now by learning the artificial vegetative i.e., Mrs. Istianik, S.Pd generates a level of kevalidan as follows:

$$P = \frac{28}{30} \times 100\% = 93\%$$

In accordance with the conversion table of scale, a percentage of the level of achievement of the 93% are on valid qualifications so that the materials do not have to do revision. This suggests that the learning materials in the form of video learning artificial breeding of vegetatively plants is already good and worthy to be used according to the instruction.

4. Attractiveness Analysis of Video Learning Media

Percentage of the assessment materials by students get value of 95%. Assessment of the students in question form, received and made into consideration to improve the learning materials.

The attractifeness learning materials can be is seen from the use of color and the kind of writing used in both categories to use. The selection of the appropriate color can make it easier for students to see more clearly what is written on the screen. The selection of the type of writing also chose the type of writing that can facilitate the students what is written on the screen.In addition to

the presence of subtitles on the video also to researchers a sound into audio on video learning so that students can see and hear the materials that are being taught.

5. Effectiveness Analysis of Student Learning Outcomes

Student learning outcomes are known to pretest and posttest grade control or class alphabets experiment. The data processing results beajar students used to know the influence between product developed by the learning achievements of students. The steps of analysis data pre-and post test-test consists of several stages: (a) calculating the average value of the control class and experimentation, (b) calculate the variance of each data, (c) calculating its homogeneity, and (d) perform t-test to find out the influence of the use of the product.

T-test was used to test different from knowing the difference which exists between one sample with another sample. The value of the results of the experimental class of pretest was 74.84, while the results of the post test of 91.56. As for the class of the control, the value of the pre- test obtained amounted to 36.09 and post test values obtained of 64.84. The calculation of t-test results obtained by this Thitung is greater than Ttabel. Thitung obtained is 13.75, while Ttabel is at number 2.045. It can be concluded that there is an influence of the use of video study of artificial breeding of vegetatively plants towards the achievements of the student learning. Unlike the class control that just getting the material with the methods of delivery in the form of lectures and by showing some related images, learning in the classroom, in addition to more

diverse experiments got the material students are also on show related videos with the material. Video learning material breeding plants vegetatively artificial is a new product so students need guidance from the teacher. However in the process of the lesson that students are very enthusiastic and very interested in using learning materials. Materials that have been designed with all the considerations that make learning materials can more effectively enhance learning achievement in students so that student learning results acquisition of experimental classes are better than the results of a study of the control class.

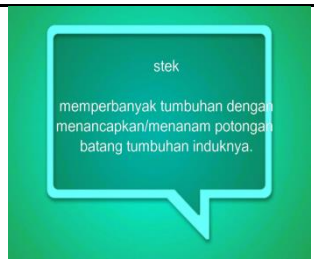
D. Product Revision

The following pemparan related data revision materials akjar form video learning in artificial vegetative plant breeding.

1. Revision Expert Content

The validation of the results by ajli of contents as well as, as well as input, criticism and suggestions towards learning materials developed, following the results of the revision of the product in the form of video-learning culture in artificial vegetative plants:

Table 4.9 learning materials based revision validation expert content

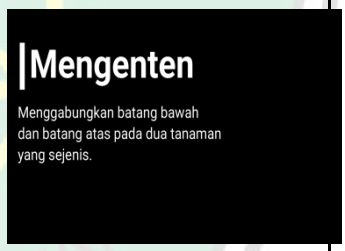
No.	The revised component	Before revision	After revision
1.	Definition of cuttings made clear		

Based on the now filled by artificial vegetative material content experts, Mr. Ahmad Abtokhi, M.Pd result valid of 89%. This shows that the video learning artificial vegetative propagation is already good and worth to be used.

2. The Revised Design Expert

From the results of validation by experts and design input, criticism and suggestions towards learning materials developed, following the results of the revision of the product in the form of video-learning culture in artificial vegetative plants:

Table 4.10 learning materials based revision of validation design expert

No.	The revised component	Before revision	After revision
1.	Forms of writing should be equated		
2.	Part of the opening video is made horizontally		

3.	Use of coztumize color		

Based on the now filled by artificial vegetative design content experts, Mr. Yuniar Setyo Marandy, S.Sn producing valid level of 78%. This shows that the video learning artificial vegetative propagation is already good and worth to be used.

3. Revision Learning Experts

The validation of the results by learning experts as well as input, criticism and suggestions towards learning materials developed, following the results of the revision of the product in the form of video-learning culture in artificial vegetative plants:

Table 4.11 learning materials based revision expert validation of learning

No.	The revised component	Before revision	After revision
1.	Correct ideas of capital letters		

Based on the now filled by artificial vegetative design content, i.e. the Mrs. Istianik, S.Pd result kevalidan of 93%. This shows that the video learning artificial vegetative breeding has been very good and worth to be used.

Results of data analysis, and advice from experts made a foundation as ingredients for the revision and refinement of materials useful for before tested to students class VIA.

CHAPTER V

CONCLUSION

A. Conclution of the Development

Based on the result of the process of developing video learning media on vegetative popagation sixth grade at MIN 6 Jembrana can be concluded as follows:

1. Development according to ADDIE which through several stages, namely analysis, design, implement, and evaluate developing. This is evidenced through produce learning materials in the form of video learning media on vegetative propagation to improve learning achievment.
2. Development of the trial results of the poll in the form of video learning media on vegetative propagation has a high level of eligibility based on the results of the poll question form validation experts and the now tangapan grade VI-A MIN 6 Jembrana can set forth as follows:

a) Polling expert content validation results against video learning media on vegetative propagation reach 89% (valid/viable), the voting results of the validation of the design experts reached 78%, and voting results of the valisasi study experts reached 93%.

b) Polling results response grade VI-A MIN 6 Jembrana against the interesting of video learning media on vegetative propagation reach 95%.

3. The level of effectiveness of video learning materials learning media on vegetative propagation demonstrated retrieved from trial results based on polling data that has been analyzed show:The value of the results of the experimental

class of pretest was 74,84, while the results of the post test of 91,56. As for the class of the control, the value of the pre- test obtained amounted to 36.09 and post test values obtained of 64,84.

a) The calculation of t-test results obtained by this Thitung is greater than Ttabel. Thitung obtained is 13.75, while Ttabel is at number 2.045, maka video learning media on vegetative propagation It has been proved that the existence of significant difference between the results of the voting of the class and grade control alphabets experiment.

Thus, the video learning materials learning media on vegetative propagation for classVI can be said to have excellent quality or effective as seen from table exchange rates based on the effectiveness of qualification numbers. This is due to the use of video learning materials learning media on vegetative propagation can assist students in improving learning achievement.

B. Suggestion

1. Suggestion for Purpose Products Utilization

a. Video learning media on vegetative propagation should be used an alternative learning media of vegetative propagation

b. Video learning media on vegetative propagation should be used with the guidance of teacher. That students are better focus in the use of video learning media on vegetative propagation.

2. Suggestion for Further Development

a) Video learning media on vegetative propagation sixth grade has some form to create. Therefore, it is suggest to interested development to overcome this weakness.

b) Video learning media on vegetative propagation for other materials need to be developed. Learning media should be developed so that it can train students independence in learning.

c) Recomnded to teachers SD/MI especially sains teachers to develop learning media in accordance with the condition of the existing school.

REFERENCES

F. j. monks, A.M.P. Knoers, dkk.1982. *Psikologi Perkembangan: Pengantar dalam Berbagai Bagiannya*.Yogyakarta:UGM Press

Sugiono.2008.*Metode Penelitian Kuantitatif, Kualitatif dan R&D*.Bandung:CV ALFABETA

Guron M. Nur, Rini Risnawita, S.2013.*Gaya Belajar Kajian Teoritik,* Yogyakarta:Pustaka Pelajar

Prawiradilaga,Dewi Salma.2007.*Prinsip Desain Pembelajaran*.kencana Prenada Media Grup:Jakarta

Arikunto,Suharsimi and Cepi Safruddin Abdul Jabar.2009.*Evaluasi Program pendidikan Pedoman praktis teoritis untuk siswa dan praktisi pendidikan edisi kedua*.Jakarta: Aksara, 2009

Hamdu, Ghullam, Lisa Agustina.2011.*Pengaruh Motivasi Belajar Siswa Terhadap Prestasi Belajar IPA di Sekolah Dasar Study Kasus Terhadap Siswa Kelas IV SDN Tarumanegara Kecamatan Tawang Kota Tasikmalaya,* Dosen Universitas Pendidikan Indonesia

Suryabrata, Sumadi.1989.*Proses Belajar Mengajar di Perguruan Tinggi.*Yogyakarta:Andi Offset

Ayu Apri Leli Emi.2014.*Teknologi Produksi Benih "Laporan Perbanyak Vegetative"*

Sadiman, Arief S. Dkk.2003.*Media Education*Jakarta: King Grafindo Persada

Asnawir and Basyiruddin Usman.2002.*Media Learning*Jakarta: Ciputat Press

Djamarah , Syaiful Bahri and Aswan Zain.2010.*Strategi Belajar Mengajar*.Jakarta: PT Rineka Cipta

Desmita. 2014. Psikologi Perkembangan Peserta Didik (Bandung: PT Remaja Rosdakarya)

Arikunto, Suharsimi.2009.*Dasar – Dasar Evaluasi Pendidikan (edisi revisi)*. Cet.IX; Jakarta: Bumi Aksara

Syah, Muhibbin.2010.*Psikologi Pendidikan dan Pendekatan Baru.*Bandumg:PT Remaja Rosdakarya

Fitratul Uyun, "*Pengembangan Bahan Ajar Pembelajaran Al-Qur'an Hadis dengan Pendekatan Humeneutik bagi Kelas V MIN 1 Malang", "Thesis"*.Malang: Program Pasca Sarjana Universitas Islam Negeri Malang

Sugiyono.2015.*Metode Penelitian Pendidikan* (Bandung:Alfabeta)

Murni, Wahid dan Ali, Nur.2008.*Penelitian Tindakan Kelas Pendidikan Agama dan Umum Dari Teori Menuu Disertai Contoh Hasil Penelitian*.Malang:UM Pres

Arief Furchan.2007.*Pengantar Penelitian Dalam Pendidikan* (Yogyakarta : Pustaka Pelajar)

Eneng Khoirunisa.2013.*Meningkatkan hasil Belajar Siswa pada Pelajaran IPA Materi Siklus Air dengan Menerapkan Metode Pembelajaran Eksperimen Penelitian Tindakan Kelas terhadap Siswa Kelas V SDN Bunisari Semester II Cianjur*, PGSD Universitas Pendidikan Indonesia

http://eprints.uny.ac.id/9225/3/BAB%202%20-%2008601244215.pdfhlm. 12 (diakses pada 08-05-2016

Appendix 1 :

Thesis Consult Evidence

KEMENTERIAN AGAMA REPUBLIK INDONESIA
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FAKULTAS ILMU TARBIYAH DAN KEGURUAN
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BUKTI KONSULTASI SKRIPSI
JURUSAN PENDIDIKAN GURU MADRASAH IBTIDAIYAH

Nama : Ova Mauliana Zulfa

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Judul : Developing Video Learning Media on Vegetative Propagation to Improve Learning Achievment of Sixth Grade Students at MIN 6 Jembrana

Dosen Pembimbing : Dr. Mokhammad Yahya. Ph.D

No.	Tgl/ Bln/ Thn	Materi Konsultasi	Tanda Tangan Pembimbing Skripsi
1.	17 / Juli / 2018	Konsultasi Bab 1, 2, 3, 4, & 5	
2.	19/ Juli /2018	Konsultasi Bab 1, 2, 3, 4, & 5	
3.	24/ Juli /2018	Final Bab 1	
4.	26/ Juli /2018	Final Bab 2	
5.	27/ Juli /2018	Final Bab 3	
6.	30/ Juli /2018	Final Bab 4	
7.	30/ Juli /2018	Final Bab 5	
8.	31/ Juli / 2018	Draft Akhir	
9.	31 Juli / 2018	Final draft	
10.			
11.			
12.			

Malang, 31 Juli 2018
Mengetahui
Ketua Jurusan PGMI,

H. Ahmad Sholeh, M.Ag
NIP. 197608032006041001

Appendix 2 :

Permit Research

KEMENTERIAN AGAMA REPUBLIK INDONESIA
UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM MALANG
FAKULTAS ILMU TARBIYAH DAN KEGURUAN
Jalan Gajayana 50, Telepon (0341) 552398 Faximile (0341) 552398 Malang
http:// fitk.uin-malang.ac.id. email : fitk@uin_malang.ac.id

Nomor : 35 /Un.03.1/TL.00.1/01/2018 10 Januari 2018
Sifat : Penting
Lampiran : -
Hal : **Izin Penelitian**

Kepada
Yth. Kepala MIN Gilimanuk Bali
di
Bali

Assalamu'alaikum Wr. Wb.

Dengan hormat, dalam rangka menyelesaikan tugas akhir berupa penyusunan skripsi mahasiswa Fakultas Ilmu Tarbiyah dan Keguruan (FITK) Universitas Islam Negeri Maulana Malik Ibrahim Malang, kami mohon dengan hormat agar mahasiswa berikut:

Nama	:	Ova Mauliana Zulfa
NIM	:	13140023
Jurusan	:	Pendidikan Guru Madrasah Ibtidaiyah (PGMI)
Semester - Tahun Akademik	:	Ganjil - 2017/2018
Judul Skripsi	:	**Developing Video Learning Media on Vegetative Propagation to Improve Learning Achievment of Sixth Grade Student's at MIN Gilimanuk**
Lama Penelitian	:	**Januari 2018** sampai dengan **Maret 2018** (3 bulan)

diberi izin untuk melakukan penelitian di lembaga/instansi yang menjadi wewenang Bapak/Ibu.

Demikian, atas perkenan dan kerjasama Bapak/Ibu yang baik disampaikan terima kasih.

Wassalamu'alaikum Wr. Wb.

Dekan,

Dr. H. Agus Maimun, M.Pd
NIP. 19650817 199803 1 003

Tembusan :

1. Yth. Ketua Jurusan PGMI
2. Arsip

Appendix 3 :

Permit has been doing Research

KEMENTERIAN AGAMA REPUBLIK INDONESIA
KEMENTERIAN AGAMA KABUPATEN JEMBRANA
MADRASAH IBTIDAIYAH NEGERI 6 GILIMANUK
Jl. Gurami No. 31 GilimanukTelpn./Fax (0365) 61489
e-mail : mingilimanuk@yahoo.co.id

SURAT IJIN PENELITIAN

B- 190 /MI.18.10/OT.01.2/03/2018

Yang bertandatangan dibawah ini Kepala Madrasah Ibtidaiyah Negeri 6 Jembrana, berdasarkan surat dari Universitas Islam Negeri Maulana Malik Ibrahim Malang Fakultas Ilmu Tarbiyah dan Keguruan (FITK) dengan Nomor : 35/Un.03.1/TL.00.1/01/2018 Tentang Permohonan Izin Penelitian, dengan ini memberikan ijin kepada :

Nama	:	**Ova Mauliana Zulfa**
NIM	:	13140023
Fakultas	:	Ilmu Tarbiyah dan Keguruan
Jurusan	:	Pendidikan Guru Madrasah Ibtidaiyah (PGMI)
Semester-TA	:	Ganjil-2017/2018
Judul Skripsi	:	"Developing Video Learning Media on Vegetative Propagation to Improve Learning Achievment of Sixth Grade Student's at MIN Gilimanuk"

Untuk melakukan penelitian di Madrasah Ibtidaiyah Negeri 6 Jembrana, sesuai dengan jadwal yang telah ditetapkan.

Demikian surat ijin ini kami buat dengan sebenar-benarnya agar dapat dipergunakan dimana mestinya

Gilimanuk, 31 Maret 2018
Kepala Madrasah,

FATHURRAHMAN, S.Ag, M.Pd
NIP. 196911272006041008

Appendix 4 :

Instrument of Sains

Learning Expert Validation

INSTRUMEN VALIDASI AHLI MATERI

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Yth. Bapak/Ibu

Ahli Materi Media Pembelajaran *Video Learning Media On Vegetative Propagation*

Di Universitas Islam Negeri Maulana Malik Ibrahim Malang

Assalamualaikum Wr. Wb.

Dengan hormat,

Dalam rangka penulisan skripsi untuk menyelesaikan Program Sarjana pada prodi Pendidikan Guru Madrasah Ibtidaiyah UIN Maulana Malik Ibrahim Malang, dan berkaitan dengan pelaksanaan pengembangan Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan kelas VI SD/MI, maka peneliti bermaksud mengadakan validasi pada Media Pembelajaran Video Learning Media On Vegetative Propagationyang telah dikembangkan. Oleh sebab itu, peneliti mohon kesediaan Bapak/Ibu untuk berkenan memberikan penilaian dan masukan tentang kesesuaian pemanfaatan Media Pembelajaran Video Learning Media On Vegetative Propagationyang dikembangkan ini. Hal ini bertujuan untuk mengetahui kelebihan dan kekurangan Media Pembelajaran Video Learning Media On Vegetative Propagationini sebelum digunakan dalam pembelajaran di kelas. Atas kesediaan dan bantuan Bapak/Ibu, peneliti mengucapkan terimakasih.

Malang, ... 2017

Ova Mauliana Zulfa

13140023

A. Identitas Ahli Materi

Nama : Ahmad Afifuddin, M.Pd

NIP : 197610032003121004

Instansi : FITK-A / PGMI

Jabatan : Dosen

B. Petunjuk Penilaian

1. Bacalah setiap item dengan cermat.
2. Sebelum mengisi angket ini, mohon terlebih dahulu Bapak/Ibu membaca atau mempelajari materi yang dikembangkan.
3. Jawaban pertanyaan di bawah ini dengan memberikan tanda centang (✓) pada alternatif jawaban yang dianggap paling sesuai dengan memeperhatikan skala berikut :

Skala Penilaian/Tanggapan
1 = Sangat Tidak Baik
2 = Kurang Baik
3 = Cukup Baik
4 = Baik
5 = Sangat Baik

4. Jika diperlukan kritik dan saran Bapak/Ibu dapat ditulis pada lembar yang telah ditentukan.
5. Kecermatan dalam penilaian ini sangat diharapkan.

C. Angket Penilaian

No	Kriteria Penilaian	Skala Penilaian				
		1	2	3	4	5
1.	Rumusan topik pada pengembangan Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan				✓	
2.	Relevansi Kompetensi Dasar dan Indikator pada Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan				✓	
3.	Kesesuaian konsep materi yang disajikan pada Video Learning Media On Vegetative Propagation				✓	
4.	Kemenarikan materi dengan menggunakan Video Learning Media On Vegetative Propagation				✓	
5.	Ruang lingkup materi yang disajikan pada Media Pembelajaran Video Learning Media On Vegetative Propagation sesuai dengan tujuan pembelajaran				✓	

6.	Media Pembelajaran Video Learning Media On Vegetative Propagation ini dapat memudahkan siswa memahami materi vegetative buatan			✓		
7.	Media Pembelajaran Video Learning Media On Vegetative Propagation tepat digunakan dalam pembelajaran materi vegetative buatan					✓

D. Saran/Komentar

Definisi stek diperjelas

Malang, 14/2 2018

Validator,

(A. Abtokhi)

NIP.

INSTRUMEN VALIDASI AHLI MATERI

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Yth. Bapak/Ibu

Ahli Materi Media Pembelajaran *Video Learning Media On Vegetative Propagation*

Di Universitas Islam Negeri Maulana Malik Ibrahim Malang

Assalamualaikum Wr. Wb.

Dengan hormat,

Dalam rangka penulisan skripsi untuk menyelesaikan Program Sarjana pada prodi Pendidikan Guru Madrasah Ibtidaiyah UIN Maulana Malik Ibrahim Malang, dan berkaitan dengan pelaksanaan pengembangan Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan kelas VI SD/MI, maka peneliti bermaksud mengadakan validasi pada Media Pembelajaran Video Learning Media On Vegetative Propagationyang telah dikembangkan. Oleh sebab itu, peneliti mohon kesediaan Bapak/Ibu untuk berkenan memberikan penilaian dan masukan tentang kesesuaian pemanfaatan Media Pembelajaran Video Learning Media On Vegetative Propagationyang dikembangkan ini. Hal ini bertujuan untuk mengetahui kelebihan dan kekurangan Media Pembelajaran Video Learning Media On Vegetative Propagationini sebelum digunakan dalam pembelajaran di kelas. Atas kesediaan dan bantuan Bapak/Ibu, peneliti mengucapkan terimakasih.

Malang, ... 2017

Ova Mauliana Zulfa

13140023

A. Identitas Ahli Materi

Nama :

NIP :

Instansi :

Jabatan :

B. Petunjuk Penilaian

1. Bacalah setiap item dengan cermat.
2. Sebelum mengisi angket ini, mohon terlebih dahulu Bapak/Ibu membaca atau mempelajari materi yang dikembangkan.
3. Jawaban pertanyaan di bawah ini dengan memberikan tanda centang (✓) pada alternatif jawaban yang dianggap paling sesuai dengan memeperhatikan skala berikut :

Skala Penilaian/Tanggapan
1 = Sangat Tidak Baik
2 = Kurang Baik
3 = Cukup Baik
4 = Baik
5 = Sangat Baik

4. Jika diperlukan kritik dan saran Bapak/Ibu dapat ditulis pada lembar yang telah ditentukan.
5. Kecermatan dalam penilaian ini sangat diharapkan.

C. Angket Penilaian

No	Kriteria Penilaian	Skala Penilaian				
		1	2	3	4	5
1.	Rumusan topik pada pengembangan Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan				✓	
2.	Relevansi Kompetensi Dasar dan Indikator pada Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan				✓	
3.	Kesesuaian konsep materi yang disajikan pada Video Learning Media On Vegetative Propagation					✓
4.	Kemenarikan materi dengan menggunakan Video Learning Media On Vegetative Propagation				✓	
5.	Ruang lingkup materi yang disajikan pada Media Pembelajaran Video Learning Media On Vegetative Propagation sesuai dengan tujuan pembelajaran				✓	

6.	Media Pembelajaran Video Learning Media On Vegetative Propagation ini dapat memudahkan siswa memahami materi vegetative buatan					√
7.	Media Pembelajaran Video Learning Media On Vegetative Propagation tepat digunakan dalam pembelajaran materi vegetative buatan					√

D. Saran/Komentar

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Ok

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Malang, 19/2 2017

Validator,

(..)

NIP. A. Habibi

Appendix 5 :

Instrument of Design

Media Expert Validation

INSTRUMEN VALIDASI AHLI MEDIA

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Yth. Bapak/Ibu

Ahli Media Pembelajaran *Video Learning Media On Vegetative Propagation*

Di Universitas Islam Negeri Maulana Malik Ibrahim Malang

Assalamualaikum Wr. Wb.

Dengan hormat,

Dalam rangka penulisan skripsi untuk menyelesaikan Program Sarjana pada prodi Pendidikan Guru Madrasah Ibtidaiyah UIN Maulana Malik Ibrahim Malang, dan berkaitan dengan pelaksanaan pengembangan Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan kelas VI SD/MI, maka peneliti bermaksud mengadakan validasi pada Media Pembelajaran Video Learning Media On Vegetative Propagationyang telah dikembangkan. Oleh sebab itu, peneliti mohon kesediaan Bapak/Ibu untuk berkenan memberikan penilaian dan masukan tentang kesesuaian pemanfaatan Media Pembelajaran Video Learning Media On Vegetative Propagation yang dikembangkan ini. Hal ini bertujuan untuk mengetahui kelebihan dan kekurangan Media Pembelajaran Video Learning Media On Vegetative Propagation ini sebelum digunakan dalam pembelajaran di kelas. Atas kesediaan dan bantuan Bapak/Ibu, peneliti mengucapkan terimakasih.

Malang, ... 2017

Ova Mauliana Zulfa

13140023

A. Identitas Ahli Media

Nama : Yunior Satyo Marandy, S.Sn

NIP : 19900607 201503 1003

Instansi : FITK UIN Malang

Jabatan : Laboran Multimedia

B. Petunjuk Penilaian

1. Bacalah setiap item dengan cermat,
2. Sebelum mengisi angket ini, mohon terlebih dahulu Bapak/Ibu membaca atau mempelajari materi yang dikembangkan.
3. Jawaban pertanyaan di bawah ini dengan memberikan tanda centang (✓) pada alternatif jawaban yang dianggap paling sesuai dengan memeperhatikan skala berikut :

Skala Penilaian/Tanggapan
1 = Sangat Tidak Baik
2 = Kurang Baik
3 = Cukup Baik
4 = Baik
5 = Sangat Baik

4. Jika diperlukan kritik dan saran Bapak/Ibu dapat ditulis pada lembar yang telah ditentukan.
5. Kecermatan dalam penilaian ini sangat diharapkan.

C. Angket Penilaian

No	Kriteria Penilaian	Skala Penilaian				
		1	2	3	4	5
1.	Kemenarikan pengemasan desain Media Pembelajaran Video Learning Media On Vegetative Propagation				✓	
2.	Kejelasan ilustrasi Media Pembelajaran Video Learning Media On Vegetative Propagation				✓	
3.	Pemakaian warna yang digunakan pada Media Pembelajaran Video Learning Media On Vegetative Propagation			✓		
4.	Media Pembelajaran Video Learning Media On Vegetative Propagation ini dapat menarik siswa minat untuk belajar				✓	
5.	Kemudahan sistem penggunaan Media Pembelajaran Video Learning Media On Vegetative Propagation				✓	
6.	Media Pembelajaran Video Learning Media On Vegetative Propagation ini dapat membantu siswa memahami				✓	

	materi vegetative buatan					
7.	Keamanan bahan yang digunakan pada Media Pembelajaran Video Learning Media On Vegetative Propagation				✓	
8.	Media pembelajaran ini sesuai dengan materi vegetative buatan				✓	

D. Saran/Komentar

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Malang, ... 2017

Validator,

(Yunar Sasyo M, S.Sy)

NIP. 19900607 201503 1003

Appendix 6 :

Instrument of Sixth Grade Sains Subject Teacher

INSTRUMEN VALIDASI PRAKTISI

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Yth. Bapak/Ibu

Ahli Materi Media Pembelajaran *Video Learning Media On Vegetative Propagation*

Di Universitas Islam Negeri Maulana Malik Ibrahim Malang

Assalamualaikum Wr. Wb.

Dengan hormat,

Dalam rangka penulisan skripsi untuk menyelesaikan Program Sarjana pada prodi Pendidikan Guru Madrasah Ibtidaiyah UIN Maulana Malik Ibrahim Malang, dan berkaitan dengan pelaksanaan pengembangan Media Pembelajaran Video Learning Media On Vegetative Propagation pada materi vegetative buatan kelas VI SD/MI, maka peneliti bermaksud mengadakan validasi pada Media Pembelajaran Video Learning Media On Vegetative Propagationyang telah dikembangkan. Oleh sebab itu, peneliti mohon kesediaan Bapak/Ibu untuk berkenan memberikan penilaian dan masukan tentang kesesuaian pemanfaatan Media Pembelajaran Video Learning Media On Vegetative Propagation yang dikembangkan ini. Hal ini bertujuan untuk mengetahui kelebihan dan kekurangan Media Pembelajaran Video Learning Media On Vegetative Propagation ini sebelum digunakan dalam pembelajaran di kelas. Atas kesediaan dan bantuan Bapak/Ibu, peneliti mengucapkan terimakasih.

Malang, ... 2017

Ova Mauliana Zulfa

13140023

A. Identitas Praktisi

Nama : ISTIANIK, S.Pd.

NIP : 19690920 200212 2001.

Instansi : MIN 6 Jembrana

Jabatan : Guru Kelas VI A.

B. Petunjuk Penilaian

1. Bacalah setiap item dengan cermat.
2. Sebelum mengisi angket ini, mohon terlebih dahulu Bapak/Ibu membaca atau mempelajari materi yang dikembangkan.
3. Jawaban pertanyaan di bawah ini dengan memberikan tanda centang (✓) pada alternatif jawaban yang dianggap paling sesuai dengan memeperhatikan skala berikut :

Skala Penilaian/Tanggapan
1 = Sangat Tidak Baik
2 = Kurang Baik
3 = Cukup Baik
4 = Baik
5 = Sangat Baik

4. Jika diperlukan kritik dan saran Bapak/Ibu dapat ditulis pada lembar yang telah ditentukan.
5. Kecermatan dalam penilaian ini sangat diharapkan.

C. Angket Penilaian

No	Kriteria Penilaian	Skala Penilaian				
		1	2	3	4	5
1.	Kemenarikan pengemasan desain Media Pembelajaran Video Learning Media On Vegetative Propagation				✓	
2.	Kejelasan ilustrasi Media Pembelajaran Video Learning Media On Vegetative Propagation				✓	
3.	Pemakaian warna yang digunakan pada Media Pembelajaran Video Learning Media On Vegetative Propagation			✓		
4.	Media Pembelajaran Video Learning Media On Vegetative Propagation ini dapat menarik siswa minat untuk belajar				✓	
5.	Kemudahan sistem penggunaan Media Pembelajaran Video Learning Media On Vegetative Propagation				✓	
6.	Media Pembelajaran Video Learning Media On Vegetative Propagation ini dapat membantu siswa memahami				✓	

	Propagationefisien digunakan dalam kegiatan pembelajaran					✓
6.	Media pembelajaran Video Learning Media On Vegetative Propagation memudahkan siswa dalam memahami materi vegetative					✓

D. Saran/Komentar

……

……

……

……

……

Malang, …….. 2017

Validator,

(…ISTIANIK, S. Pd.…)

NIP. 19690920 200212 2 001.

Appendix 7 :

Instrument of Field Trial Questionnaires

ANGKET RESPON SISWA KELOMPOK EKSPERIMEN

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Assalamualaikum Wr. Wb.

Anak-anak, media pembelajaran yang digunakan untuk belajar itu sangat banyak sekali. Kemarin kita telah belajar menggunakan media *Video Learning Media Vegetative Propagation*. Media ini dirancang semenarik mungkin agar anak-anak dapat memahami materi dengan mudah dan menyenangkan.

Anak-anak, setelah belajar menggunakan media *Video Learning Media Vegetative Propagation* pada materi vegetative buatan, peneliti bermaksud untuk mengadakan pengecekan pada media *Video Learning Media Vegetative Propagation*. Oleh karena itu, peneliti mohon kesediaan anak-anak sekalian untuk mengisi angket dibawah ini sebagai sumber belajar. Tujuan dari pengisian angket adalah mengetahui kesesuaian pemanfaatan media pembelajaran sebagaimana yang telah dirancang berdasarkan materi tematik yang terkait. Hasil pengukuran melalui angket akan digunakan untuk menyempurnakan media *Video Learning Media Vegetative Propagation*agar dapat dimanfaatkan dalam kegiatan belajar mengajar. Sebelumnya saya sampaikan terima kasih banyak atas kesediaan anak-anak sebagai pemakai media pembelajaran.

Nama : Avirana Nabilah

Kelas : VI A

Sekolah : MIN 6 Jemrana

A. Petunjuk pengisian angket

1. Sebelum mengisi angket ini, mohon terlebih dahulu untuk mempelajari media *Video Learning Media Vegetative Propagation*
2. Berilah tanda (X) pada salah satu huruf a, b, c, atau d pada jawaban yang sesuai dengan respon yang kalian anggap tepat
3. Kecermatan dalam ini sangat diharapkan.

B. Pertanyaan-pertanyaan angket

1. Apakah kalian senang belajar menggunakan media *Video Learning Media Vegetative Propagation*?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

2. Apakah dengan media *Video Learning Media Vegetative Propagation* dapat memberikan semangat dalam belajar?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

3. Apakah media *Video Learning Media Vegetative Propagation* mudah digunakan dalam pembelajaran materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

4. Apakah media *Video Learning Media Vegetative Propagation* ini menarik untuk mempelajari materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

5. Apakah media *Video Learning Media Vegetative Propagation* dapat memudahkan kalian untuk memahami materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

6. Apakah petunjuk pemakaian yang tersedia pada media pembelajaran ini jelas?

   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

C. Komentar dan Saran yang berkenaan dengan media pembelajaran *Video Learning Media Vegetative Propagation*

Kami dapat memahami materi yang disampaikan dengan lebih mudah dan cepat

ANGKET RESPON SISWA KELOMPOK EKSPERIMEN

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Assalamualaikum Wr. Wb.

Anak-anak, media pembelajaran yang digunakan untuk belajar itu sangat banyak sekali. Kemarin kita telah belajar menggunakan media *Video Learning Media Vegetative Propagation.* Media ini dirancang semenarik mungkin agar anak-anak dapat memahami materi dengan mudah dan menyenangkan.

Anak-anak, setelah belajar menggunakan media *Video Learning Media Vegetative Propagation* pada materi vegetative buatan, peneliti bermaksud untuk mengadakan pengecekan pada media *Video Learning Media Vegetative Propagation.* Oleh karena itu, peneliti mohon kesediaan anak-anak sekalian untuk mengisi angket dibawah ini sebagai sumber belajar. Tujuan dari pengisian angket adalah mengetahui kesesuaian pemanfaatan media pembelajaran sebagaimana yang telah dirancang berdasarkan materi tematik yang terkait. Hasil pengukuran melalui angket akan digunakan untuk menyempurnakan media *Video Learning Media Vegetative Propagation*agar dapat dimanfaatkan dalam kegiatan belajar mengajar. Sebelumnya saya sampaikan terima kasih banyak atas kesediaan anak-anak sebagai pemakai media pembelajaran.

Nama : Febri Hendrik Pratama

Kelas : VI A

Sekolah : MIN 6 Jembrana

A. Petunjuk pengisian angket

1. Sebelum mengisi angket ini, mohon terlebih dahulu untuk mempelajari media *Video Learning Media Vegetative Propagation*
2. Berilah tanda (X) pada salah satu huruf a, b, c, atau d pada jawaban yang sesuai dengan respon yang kalian anggap tepat
3. Kecermatan dalam ini sangat diharapkan.

B. Pertanyaan-pertanyaan angket

1. Apakah kalian senang belajar menggunakan media *Video Learning Media Vegetative Propagation*?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

2. Apakah dengan media *Video Learning Media Vegetative Propagation* dapat memberikan semangat dalam belajar?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

3. Apakah media *Video Learning Media Vegetative Propagation* mudah digunakan dalam pembelajaran materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

4. Apakah media *Video Learning Media Vegetative Propagation* ini menarik untuk mempelajari materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

5. Apakah media *Video Learning Media Vegetative Propagation* dapat memudahkan kalian untuk memahami materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

6. Apakah petunjuk pemakaian yang tersedia pada media pembelajaran ini jelas?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

C. Komentar dan Saran yang berkenaan dengan media pembelajaran *Video Learning Media Vegetative Propagation*

komentar saya sangat senang dengan pembelajaran ini mudah memaham. dan menarik

ANGKET RESPON SISWA KELOMPOK EKSPERIMEN

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Assalamualaikum Wr. Wb.

Anak-anak, media pembelajaran yang digunakan untuk belajar itu sangat banyak sekali. Kemarin kita telah belajar menggunakan media *Video Learning Media Vegetative Propagation.* Media ini dirancang semenarik mungkin agar anak-anak dapat memahami materi dengan mudah dan menyenangkan.

Anak-anak, setelah belajar menggunakan media *Video Learning Media Vegetative Propagation* pada materi vegetative buatan, peneliti bermaksud untuk mengadakan pengecekan pada media *Video Learning Media Vegetative Propagation.* Oleh karena itu, peneliti mohon kesediaan anak-anak sekalian untuk mengisi angket dibawah ini sebagai sumber belajar. Tujuan dari pengisian angket adalah mengetahui kesesuaian pemanfaatan media pembelajaran sebagaimana yang telah dirancang berdasarkan materi tematik yang terkait. Hasil pengukuran melalui angket akan digunakan untuk menyempurnakan media *Video Learning Media Vegetative Propagation*agar dapat dimanfaatkan dalam kegiatan belajar mengajar. Sebelumnya saya sampaikan terima kasih banyak atas kesediaan anak-anak sebagai pemakai media pembelajaran.

Nama : Amira Dewi Nur Hasanah

Kelas : VI A

Sekolah : Min 6 Jembrana

A. Petunjuk pengisian angket

1. Sebelum mengisi angket ini, mohon terlebih dahulu untuk mempelajari media *Video Learning Media Vegetative Propagation*
2. Berilah tanda (X) pada salah satu huruf a, b, c, atau d pada jawaban yang sesuai dengan respon yang kalian anggap tepat
3. Kecermatan dalam ini sangat diharapkan.

B. Pertanyaan-pertanyaan angket

1. Apakah kalian senang belajar menggunakan media *Video Learning Media Vegetative Propagation*?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

2. Apakah dengan media *Video Learning Media Vegetative Propagation* dapat memberikan semangat dalam belajar?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

3. Apakah media *Video Learning Media Vegetative Propagation* mudah digunakan dalam pembelajaran materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

4. Apakah media *Video Learning Media Vegetative Propagation* ini menarik untuk mempelajari materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

5. Apakah media *Video Learning Media Vegetative Propagation* dapat memudahkan kalian untuk memahami materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

6. Apakah petunjuk pemakaian yang tersedia pada media pembelajaran ini jelas?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

C. Komentar dan Saran yang berkenaan dengan media pembelajaran *Video Learning Media Vegetative Propagation*

Kami dapat memahami materi Vegetatif buatan yg. dijelaskan dan dapat mengerjakan dengan baik

ANGKET RESPON SISWA KELOMPOK EKSPERIMEN

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Assalamualaikum Wr. Wb.

Anak-anak, media pembelajaran yang digunakan untuk belajar itu sangat banyak sekali. Kemarin kita telah belajar menggunakan media *Video Learning Media Vegetative Propagation*. Media ini dirancang semenarik mungkin agar anak-anak dapat memahami materi dengan mudah dan menyenangkan.

Anak-anak, setelah belajar menggunakan media *Video Learning Media Vegetative Propagation* pada materi vegetative buatan, peneliti bermaksud untuk mengadakan pengecekan pada media *Video Learning Media Vegetative Propagation*. Oleh karena itu, peneliti mohon kesediaan anak-anak sekalian untuk mengisi angket dibawah ini sebagai sumber belajar. Tujuan dari pengisian angket adalah mengetahui kesesuaian pemanfaatan media pembelajaran sebagaimana yang telah dirancang berdasarkan materi tematik yang terkait. Hasil pengukuran melalui angket akan digunakan untuk menyempurnakan media *Video Learning Media Vegetative Propagation*agar dapat dimanfaatkan dalam kegiatan belajar mengajar. Sebelumnya saya sampaikan terima kasih banyak atas kesediaan anak-anak sebagai pemakai media pembelajaran.

Nama : Saskia Amelia Putri

Kelas : VI A

Sekolah : MIN 6 Jembrana

A. Petunjuk pengisian angket

1. Sebelum mengisi angket ini, mohon terlebih dahulu untuk mempelajari media *Video Learning Media Vegetative Propagation*
2. Berilah tanda (X) pada salah satu huruf a, b, c, atau d pada jawaban yang sesuai dengan respon yang kalian anggap tepat
3. Kecermatan dalam ini sangat diharapkan.

B. Pertanyaan-pertanyaan angket

1. Apakah kalian senang belajar menggunakan media *Video Learning Media Vegetative Propagation*?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

2. Apakah dengan media *Video Learning Media Vegetative Propagation* dapat memberikan semangat dalam belajar?
   X a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

3. Apakah media *Video Learning Media Vegetative Propagation* mudah digunakan dalam pembelajaran materi vegetative buatan?
   X a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

4. Apakah media *Video Learning Media Vegetative Propagation* ini menarik untuk mempelajari materi vegetative buatan?
   X a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

5. Apakah media *Video Learning Media Vegetative Propagation* dapat memudahkan kalian untuk memahami materi vegetative buatan?
   a. Sangat senang
   X b. Senang
   c. Kurang senang
   d. Tidak senang

6. Apakah petunjuk pemakaian yang tersedia pada media pembelajaran ini jelas?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

C. Komentar dan Saran yang berkenaan dengan media pembelajaran *Video Learning Media Vegetative Propagation*

Video Learning Media Vegetative Propagation Sangat Senang dengan video learning media.

ANGKET RESPON SISWA KELOMPOK EKSPERIMEN

"DEVELOPING VIDEO LEARNING MEDIA ON VEGETATIVE PROPAGATION TO IMPROVE LEARNING ACHIEVMENT OF SIXTH GRADE STUDENT AT MIN 6 JEMBRANA"

Assalamualaikum Wr. Wb.

Anak-anak, media pembelajaran yang digunakan untuk belajar itu sangat banyak sekali. Kemarin kita telah belajar menggunakan media *Video Learning Media Vegetative Propagation*. Media ini dirancang semenarik mungkin agar anak-anak dapat memahami materi dengan mudah dan menyenangkan.

Anak-anak, setelah belajar menggunakan media *Video Learning Media Vegetative Propagation* pada materi vegetative buatan, peneliti bermaksud untuk mengadakan pengecekan pada media *Video Learning Media Vegetative Propagation*. Oleh karena itu, peneliti mohon kesediaan anak-anak sekalian untuk mengisi angket dibawah ini sebagai sumber belajar. Tujuan dari pengisian angket adalah mengetahui kesesuaian pemanfaatan media pembelajaran sebagaimana yang telah dirancang berdasarkan materi tematik yang terkait. Hasil pengukuran melalui angket akan digunakan untuk menyempurnakan media *Video Learning Media Vegetative Propagation*agar dapat dimanfaatkan dalam kegiatan belajar mengajar. Sebelumnya saya sampaikan terima kasih banyak atas kesediaan anak-anak sebagai pemakai media pembelajaran.

Nama : Diaq Inari Wahyu Astuti

Kelas : VI A

Sekolah : MIN 6 JEMBRANA

A. Petunjuk pengisian angket

1. Sebelum mengisi angket ini, mohon terlebih dahulu untuk mempelajari media *Video Learning Media Vegetative Propagation*
2. Berilah tanda (X) pada salah satu huruf a, b, c, atau d pada jawaban yang sesuai dengan respon yang kalian anggap tepat
3. Kecermatan dalam ini sangat diharapkan.

B. Pertanyaan-pertanyaan angket

1. Apakah kalian senang belajar menggunakan media *Video Learning Media Vegetative Propagation*?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

2. Apakah dengan media *Video Learning Media Vegetative Propagation* dapat memberikan semangat dalam belajar?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

3. Apakah media *Video Learning Media Vegetative Propagation* mudah digunakan dalam pembelajaran materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

4. Apakah media *Video Learning Media Vegetative Propagation* ini menarik untuk mempelajari materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

5. Apakah media *Video Learning Media Vegetative Propagation* dapat memudahkan kalian untuk memahami materi vegetative buatan?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

6. Apakah petunjuk pemakaian yang tersedia pada media pembelajaran ini jelas?
   a. Sangat senang
   b. Senang
   c. Kurang senang
   d. Tidak senang

C. Komentar dan Saran yang berkenaan dengan media pembelajaran *Video Learning Media Vegetative Propagation*

Saat penampilan video ada beberapa gambar yang kurang jelas. Tapi saya senang saat belajar menggunakan media video Learning media Vegetative propagation ☺

Appendix 8 :

Pre Test

Control Group Data

95

NAMA: RIDANAR PERMANA P.
KELAS : VI B

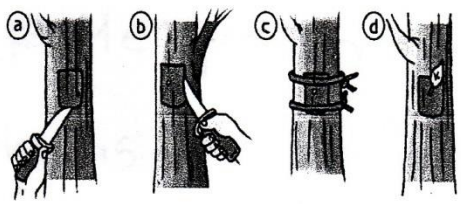
Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

NAMA : RIDANAR PERMANA P.
kelas : VI B

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

NAMA : RIDANAR PERMANAP
Kelas : VI B

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

JAWABAN

~~Mencangkok dan~~

1 Mengenten dan merunduk

2 okulasi

3

4

5 -~~Veget~~ berkembangan vegetatif ~~Ad~~ alami adalah berkembang biakan dengan ~~cara~~ tanpa melalui ~~manusia~~ perantara manusia
- berkembangan

FARHAN SYAH

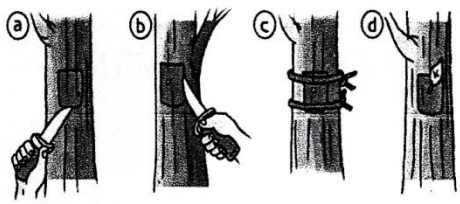
40

Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....S
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

Jawaban

1) Stek Batang , Tunas

2) mencang kok , megenten

3) Singkong Bambu Jagung

4) Batan , Tunas

5) , adaputik , Tidak ada PUTIK ,

NAMA : NOVEL MULHAMUL ELMY
NO : 21
KLS : 6B

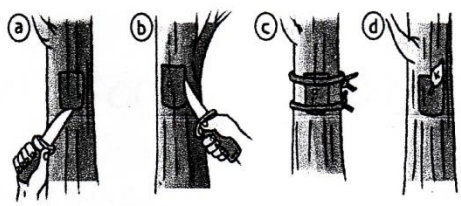
40

Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

II. 1 Mencangkok dan

2 Mengenten Setek

3 Singkong, Jambu, Buah naga

4 Perkembangbiakan tumbuhan yg dilakukan dengan cara menyambung dua tanaman yg berbeda tapi sejenis

5

NAMA = ahmad jadani
KLS = 6B

30

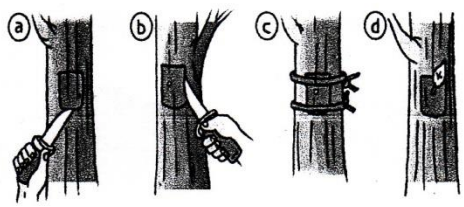
Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji

   B = 9
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

1 mencakak

2 mengenten

3 Singkong

4

5

NOKIA DANDA S

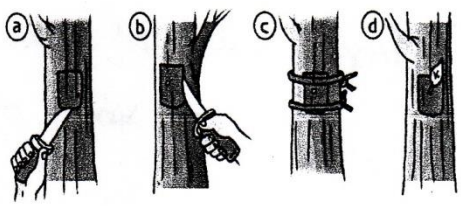
35

Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan.... menyetek
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang! jambu dan mangga Bunnga
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

1. tunas dan Batang
2. menyetek
3. mawar, jepun dan begoina
4. Saya tidak tau
5. yg Alami dibantu hewan dan buatan dibantu dengan manusia

Appendix 9 :

Pre Test

Experiment Group Data

Nama : Dhiyaa Nisaa Mufiidah

60

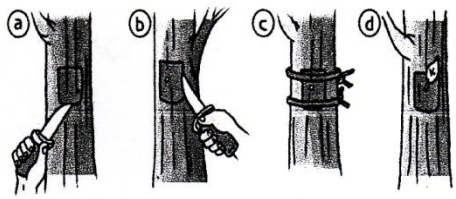
Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

Nisaa M.

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

Nisaa M.

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

Jawab

1. dan
2.
3. - ketela pohon
   - Mawar
4.
5. Vegetatif Alami adalah perkembangbiakkan yang tidak dibantu manusia. sedangkan Vegetatif buatan adalah perkembangbiakkan yang dibantu manusia

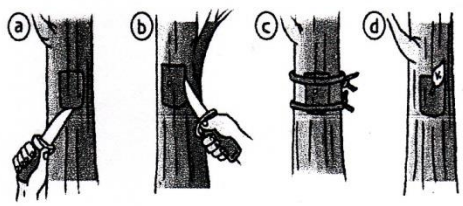
Nama : Agrinda Yudrasna Hidayah

Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

Nama = Agninda Yadiana Hidayah

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan.... tunas stek
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan... okulasi
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang! mawar, melati, ketela pohon
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

Vegetatif alami = perkembang biakan tumbuhan tanpa perkawinan secara alami

" buatan = perkembang biakan tumbuhan tanpa perkawinan dengan cara di bantu oleh manusia

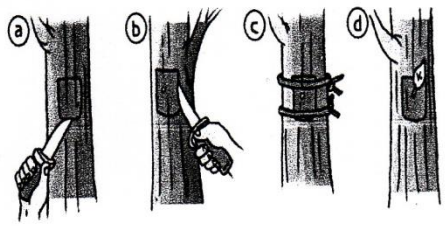
NAMA : ITA Juwita Wanda
KLS : VI. A (enam . A)

Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

JAWAB !

1.

2.

3.

4.

5. Vegetatif alami adalah

Nama : Saskia Amelia putri

Kls : VI A

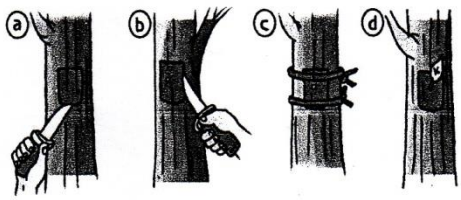
40

Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

1. Mencangkok
2. vegetatif
3.
4
5

NAMA : AHMAD NABIL PURNAMA

KLS : VI (Enam) A

NO : 5

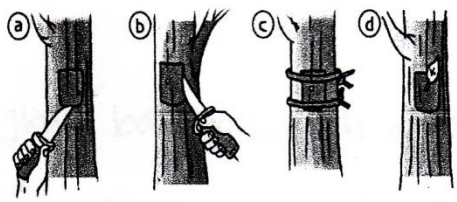
05

Soal-soal Pre-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Perkembangbiakan tumbuhan melalui sel jantan (*benang sari*) dan sel betina (*putik*) disebut dengan perkembangbiakan secara....
   a. Vegetatif
   b. Generatif
   c. Vegetatif buatan
   d. Vegetatif alami
2. Di bawah ini adalah perkembangan tumbuhan secara vegetatif buatan yaitu....
   a. Tunas
   b. Umbi lapis
   c. Okulasi
   d. Geragih
3. Dibawah ini adalah perkembangbiakan secara vegetatif alami, kecuali....
   a. Cangkok
   b. Tunas
   c. Geragih
   d. Biji
4. Tumbuhan yang berkembang biak dengan batang adalah....
   a. Kentang
   b. Singkong
   c. Bambu
   d. Mangga
5. Stek batang adalah cara yang cocok untuk mengembangbiakkan....
   a. Begonia
   b. Mangga
   c. Cocor bebek
   d. Singkong
6. Tumbuhan di bawah ini yang tidak bisa dicangkok adalah....
   a. Belimbing
   b. Mangga
   c. Jagung
   d. Jambu

7. Ketela pohon dikembangbiakkan dengan cara menanam batangnya tanpa menunggu tumbuhnya akar baru. Perkembangbiakan ini disebut dengan....
   a. Cangkok
   b. Stek batang
   c. Merunduk
   d. Stek daun
8. Perkembangbiakan tumbuhan yang dilakukan dengan cara menyambung dua tanaman yang berbeda tapi sejenis disebut....
   a. Stek
   b. Mengenten
   c. Mencangkok
   d. Merunduk
9. Gambar dibawah ini merupakan perkembangbiakan dengan cara....



   a. Tunas
   b. Stek
   c. Cangkok
   d. Okulasi
10. 1. Setelah ditutup ikat dengan tali
    2. Tutup bagian yang dikupas dengan tanah yan dibungkus plastik
    3. Kupas kulit dan kambiumnya
    4. Siramlah bagian yang ditutup agar tetap lembab

    Urutan cara mencangkok yang benar adalah....
    a. 4,3,2,1
    b. 2,3,4,1
    c. 3,2,1,4
    d. 1,2,3,4

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Tanaman tebu dapat berkembangbiak dengan cara...dan....
2. Perkembangbiakan yang dilakukan dengan menempelkan mata tunas tumbuhan yang sejenis namum berbeda sifat disebut dengan....
3. Sebutkan tiga contoh tanaman yang dapat dikembangbiakkan dengan cara stek batang!
4. Jelaskan perkembangbiakan dengan cara mengenten!
5. Jelaskan perbedaan perkembangbiakan vegetatif alami dan buatan!

B.

1. Tunas dan stek

2. okulasi

3. – ketela pohon
   – mawar
   – melati

4. menggabungkan batang bawah dan batang atas dua tanaman yg sejenis

5. ; tidak menggunakan buatan manusia
vegetatif alami

Vegetatif buatan → ~~tidak~~ menggunakan bantuan manusia

Appendix 10:

Post Test

Control Group Data

NAMA : RIDANAR PERMANA P
kelas : VI B

Soal-soal Post-Test

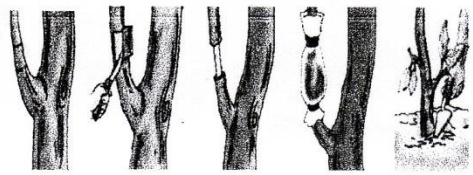
A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

NAMA : RIDANAR PERMANA P.
kelas : VI B

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

NAMA : RIDANAR PERMANA P.
kelas : VI B

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

JAWABAN

1 Mencangkok, stek, mengenten, okulasi

2 Mencangkok dan stek

3 Mangga, jambu biji,

4 Perkembangbiakan vegetatif alami adalah Perkembangbiakan tumbuhan melalui perantara manusia

5 kupas kulit batang pohon, masukan tanah kedalam kulit yang dikupas, ikat dengan tali fafia siramilah air

FARHAN SYAH

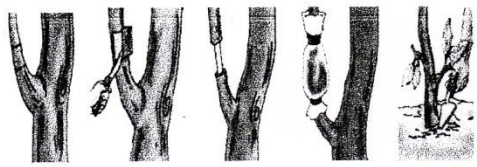
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

Jawaban

1) cangkok coren dikucasi

2) ~~Ato~~ Acami dan Buatan

3) munga jcimbu sawo

4) dicangkok

5) diiris dikasi pasir dan ditutup olen plastik dan disiram

Nama: NOVEL MULHAMUL ELMY
No : 21
Kls : 6B

(65)

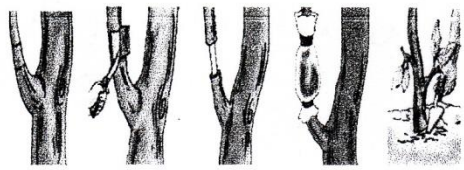
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

II

1 cangkok, okulasi, stek, enten

2 cangkok dan stek

3 mangga, jambu biji, buah naga

4 yg di buat oleh manusia

5 kupas kulit pasir plastik

ahmad jaelan

65

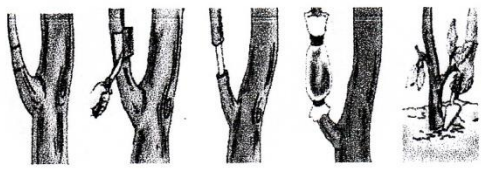
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   x. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   x. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   x. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   x. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   x. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

1 Cangkok . okulasi . Stek . enten ~

2 Cangkok dan Stek !

3 mangga . jambu ~~biji~~ biji , sawo ~

4 yg di buat oleh manusia ~

5 Kupas . ambil kasi pasth dan pelastik lalu air !

NOKIA

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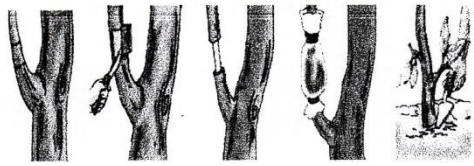
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

II

1. cangkok, stek, okulasi, enten
2. batang dan daun
3. jambu, mangga, melengo
4. perkawinan yg dibantu manusia
5. meniris pohunya memberitanan membungus

Appendix 11:

Post Test

Experiment Group Data

Dhiyaa Nisaa Mufiidah

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Soal-soal Post-Test

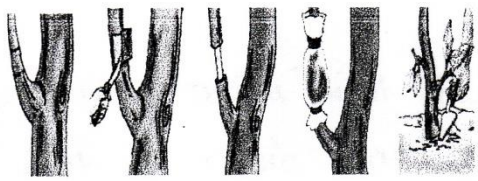
A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

Nisaa M.

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

Nisaa M.

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

Jawab

1. Cangkok, stek, Okulasi, Merunduk, Enten (mengenten)
2. Vegetatif dan Generatif
3. - Mangga
   - Jambu Biji
   - Rambutan
4. Vegetatif buatan adalah perkembangbiakkan secara tidak kawin pada tumbuhan yang sengaja di kukan oleh manusia atau dengan bantuan manusia.
5. * Pilih salah satu pohon yang akan dicangkok. kemudian pilih salah satu cabang pohon.
   * Buat sayatan melingkar. kemudian kupas kulitnya!
   * Tutup sayatan tersebut dengan tanah yang subur! Bungkus tanah tadi dengan sabut kelapa atau plastik. kemudian ikat pada kedua ujungnya.
   * Siramlah cangkokan secara teratur!

Nama : Agrinda Yudiasna Hidayah.

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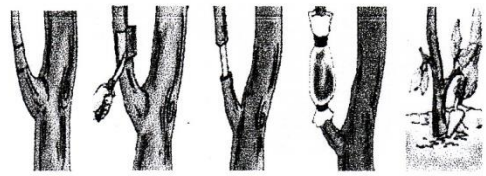
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

Jawab

1. - Mencangkok
   - Stek
   - Okulasi
   - Mengerten
   - Merunduk

2. - Mencangkok
   - Okulasi

3. - Jambu
   - Mangga
   - Jeruk

4. Perkembangbiakan tumbuhan tanpa kawin dengan dibantu manusia

5. - Iris kulit pohon
   - buat plastik / sabut kelapa yg di isi tanah
   - Ikat di irisan kulit pohon
   - Tunggu tunggu berakar
   - Setelah berakar tanam di tanah.

NAMA : Ifa Juwita Wanda
KLS : VI . A (ENAM . A)

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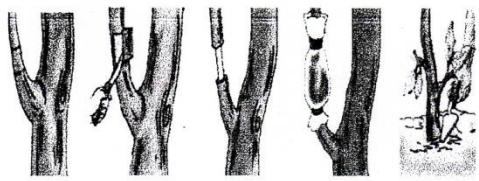
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

JAWAB !

1. - Mencangkok
   - Stek
   - Merunduk
   - okulasi
   - kopulasi

2. Di Cangkok dan perlu bantuan manusia

3. - Mangga
   - Rambutan
   - Jambu biji

4. tumbuhan yang berkembangbiak dengan cara bantuan manusia

5. 1 : Mengupas kulit yang menempel pda dahan hingga bersih, bersihkan getah atau lendir yang masih menempel pada batang
   2 : Bungkus / tutuplah bagian yang dikupas menggunakan tanah yang telah dibungkus plastik / Sabut kelapa
   3 : Setelah itu ikat dengan tali rafiah dengan rapat

Setelah itu siram cangkokan tersebut secara rutin setiap harinya, kurang lebih 3-4 bulan dan akar mulai tumbuh, lepas balutan plastik dan cangkokan bisa ditanam pda media baru.

Nama : Saskia Amelia Putri
Kls : VI A

80

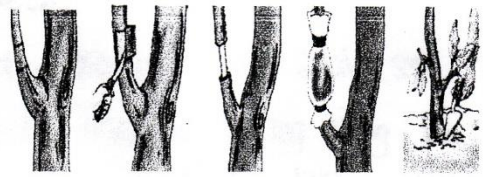
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

1. Secara tidak kawin pada tumbuhan yang sengaja dilakukan oleh manusia atau dengan bantuan manusia

2. Mencangkok dan okulasi

3. Jeruk - jambu, mangga, rambutan, durian, dll

4. Secara tidak kawin pada tumbuhan yg sengaja dilakukan oleh manusia

5. - Pilih salah satu pohon yang akan dicangkok. Kemudian pilih salah satu cabang pohon yang sudah agak tua - Batang yang dipilih haruslah batang yang lurus,
   - Buat sayatan melingkar sepanjang 10 cm - Kemudian kupas kulitnya!
   - Hilangkan bagian kambiumnya dgn cara mengerik bagian yang di rasakan berlendir!
   - Tutup sayatan tersebut dengan tanah yang subur! Bungkus tanah tadi dengan sabut kelapa atau plastik! kemudian ikat pada kedua bagian ujungnya!
   - Siramlah cangkokan secara teratur!
   - Setelah ±3 minggu amati pertumbuhan akar dari ujung plastik!
   - Jika sudah tumbuh akar yang banyak, Potonglah cangkokan tersebut! Tanaman hasil cangkokan pada tanah yang subur dan cukup mendapat cahaya matahari.

NAMA : AHMAD NABIL PURNAMA
KLS : VI (enam) A

90

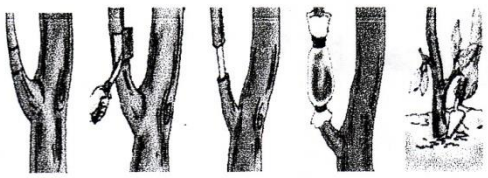
Soal-soal Post-Test

A. Berilah tanda silang (x) pada huruf a,b, c, atau d di depan jawaban yang paling benar!

1. Tumbuhan yang bereproduksi secara tak kawin dengan bantuan manusia disebut....
   x a. Generatif
   b. Vegetative buatan
   c. Vegetative alami
   d. Aseksual alami
2. Berikut merupakan perkembangbiakan vegetative secara buatan yaitu....
   a. Stek, umbi batang, umbi akar dan tunas daun
   b. Tunas, umbi batang, tunas batang dan geragih
   c. Cangkok, stek, okulasi dan tunas
   x d. Stek, okulasi, cangkok dan mengenten
3. Perkembangbiakan tumbuhan yang dilakukan dengan cara menimbun bagian cabang yang memanjang dalam permukaan tanah disebut....
   x a. Merunduk
   b. Okulasi
   c. Stek
   d. Mengenten
4. Berikutyang termasuk tumbuhan yang dapat di cangkok yaitu....
   a. Mangga dan singkong
   b. Jambu san kangkung
   x c. Mangga dan jambu
   d. Singkong dan umbi batang
5. Batang singkong di bagian bawah dipotong menyerong kemudian ditanam di tanah yang subur dan diberi peneduh dan disiram. Kegiatan tersebut merupakan salah satu contoh perkembangbiakan dengan cara....
   a. Tunas
   x b. Stek
   c. Cangkok
   d. Enten
6. Perkembangbiakan yang dilakukan dengan cara menempelkan mata tunas dari tumbuhan yang sejenis namun memiliki sifat yang berbeda disebut....

a. Cangkok
b. Stek
c. Okulasi
d. Enten

7. Perkembangan vegetatif dibagi menjadi dua macam, yaitu....
   a. Alami dan biologi
   b. Biologi dan kimia
   c. Alami dan buatan
   d. Buatan dan fisika
8. Perkembangbiakan yang dilakukan dengan cara menggabungkan batang atas dan batang bawah tanaman yang sejenis disebut....
   a. Enten
   b. Cangkok
   c. Stek
   d. okulasi
9. Gambar disamping merupakan perkembangbiakan tumbuhan secara vegetative buatan yaitu....



   a. Cangkok
   b. Stek
   c. Merunduk
   d. tunas
10. 1. Iris kulit yang ditempeli
    2. Iris kulit batang yang memliki tunas
    3. Irisan yang memiliki tunas ditempel pada batang yang akan ditempeli
    4. Potonglah bagian atas batang jika tunas telah muncul

    Menurut data diatas merupakan cara perkembangbiakan secara....
    a. Cangkok
    b. Okulasi
    c. Stek
    d. Merunduk

B. Isilah titik di bawah ini dengan jawaban yang benar!

1. Sebutkan macam-macam perkembangbiakan secara vegetative buatan....
2. Tanaman mangga dapat berkembangbiak dengan cara...dan....
3. Sebutkan tiga contoh tumbuhan yang berkembangbiak dengan cara dicangkok!
4. Apa yang dimaksud dengan perkembangbiakan tumbuhan dengan cara vegetatif buatan?
5. Sebutkan tata cara mencangkok yang benar!

B

1. mencangkok, menempel (okulasi), menyambung/mengenten, stek, dan merunduk.

2). mencangkok dan okulasi

3). mangga, jambu, dan jeruk

4). Perkembangbiakan secara tidak kawin pada tumbuhan yg sengaja dilakukan oleh manusia atau dengan bantuan manusia.

5). 1 - pilihlah salah satu pohon yg akan dicangkok. pilih batang pohon yg agak tua
2 - buat sayatan melingkar sepanjang 10 cm. kemudian kupas kulitnya.
3 - Hilangkan bagian kambiumnya dengan cara mengerik bagian yg dirasakan berlendir.
4 - Tutup sayatan tersebut dengan tanah. Bungkus tanah dengan sabut kelapa atau plastik lalu ikat ujungnya.
5 - siramlah cangkokan secara teratur.
6 - setelah ± 3 minggu amati pertumbuhan akar dari ujung plastik.
7 - jika sudah tumbuh akar yg banyak, potonglah cangkokan tersebut.

Appendix 12:

RPP

RENCANA PELAKSANAAN PEMBELAJARAN

Satuan Pendidikan :SekolahDasar

Mata Pelajaran : Ilmu Penegetahuan Alam

Kelas/Semester : VI/1

AlokasiWaktu : 2 x 35 menit

A. Standar Kompetensi

4. Memahami cara perkembangbiakan makhluk hidup

B. Kompetensi Dasar

4.1. Mengidentifikasi cara perkembangbiakan tumbuhan dan hewan

C. Indikator

1. Kognitif
   a. Produk :
      1) Merumuskan cara melakukan perkembangbiakan tumbuhan secara vegetative buatan
   b. Proses :
      1) Menjelaskan tatacara dalam melakukan perkembangbiakan tumbuhan secara vegetative buatan
2. Afektif
   a. Bekerjasama dengan baik
   b. Mengerti dan menghargai pendapat orang lain
   c. Melaksanakan tugas dengan baik dan penuh tanggung jawab
   d. Mampuberkomunikasi secara lisan
   e. Mampuberkomunikasi secara tertulis
3. Psikomotor
   a. Memperagakan tata cara melakukan cangkok, stek, enten dan okulasi

D. TujuanPembelajaran

1. Kognitif
   a. Produk :

1) Melaluikegiatan Tanya jawab dengan menggunakan media video perkembangbiakan vegetative buatan, siswa dapat mengetahui apa yang dimaksud dengan cangkok, enten, stek dan okulasi
2) Melalui kegiatan diskusi dapat mengetahui tata cara dalam melakukan cangkok, enten, stek dan okulasi

b. Proses :

1) Dengan diberikan video mengenai perkembangbiakan tumbuhan secara vegetative buatan siswa memahami apa yang dimaksud dengan cangkok, enten, stek dan okulasi

2. Afektif :

a. Mampu untuk saling mengerti dan menghargai pendapat orang lain
b. Mampu melaksanakan tugas dengan baik dan penuh tanggung jawab
c. Mampu berkomunikasi secara lisan dengan menggunakan bahasa yang baik dan benar.
d. Mampu berkomunikasi secara tertulis

3. Psikomotor:

a. Dengan mengamati objek yang ada di lingkungan sekolah siswa dapat menuliskan tumbuhan apa saja yang dapat dicangkok, stek, enten dan okulasi
b. Dengan bimbingan guru, siswa mampu melakukan cangkok, stek, enten dan okulasi

E. Materi Pembelajaran

1. Perkembangbiakan Tumbuhan

F. Model dan Metode Pembelajaran

1. Model Pembelajaran :

Pembelajaran Kooperatif

2. MetodePembelajaran :

a. Diskusi
b. Demonstrasi
c. Tanya jawab

G. KegiatanPembelajaran

Tahap	Uraian Kegiatan	Alokasi Waktu
KegiatanAwal	a. Persiapan - Mengucapkan salam - Berdoa - Memeriksa kebersihan kelas - Mengecek kehadiransiswa - Menyiapkan siswa untuk belajar b. Apersepsi - Guru dan siswa bertanya jawab - “Pernahkah kalian melihat ibu atau ayahmu melakukan melakukan cangkok?” - “Apakah kalian tahu mengapa hal itu dilakukan?” c. Motivasi - Guru menulis judul pembelajaran di papan tulis “ Selamatkan Makhluk Hidup” - Guru menyampaikan tujuan pembelajaran	15 menit
KegiatanInti	- Guru memberikan pertanyaan, “apakah kalian tahu pohon manga berkembang biak melalui apa?”, setelah itu guru memberikan instruksi untuk membuat 4 kelompok - Masing-masing kelompok mengirimkan satu perwakilan untuk gulungan mengenai cangkok, stek, enten dan okulasi - Guru menayangkan video mengenai perkembangbiakan secara vegetatif butatan - Setelah itu mengamati video guru memberikan instruksi kepada siswa untuk mempraktekkan cara mencangkok, stek,	45 menit

	enten dan okulasi - Dalam kelompok kecil siswa akan mempraktikkan kegiatan mengembang biakkan tumbuhan dengan cara vegetatif buatan. Satu kelompok akan melakukan satu jenis percobaan. - Ingatkan kepada siswa untuk melakukan percobaan dengan tertib dengan mengikuti langkah-langkah pada video - Ingatkan kepada siswa untuk bekerja sama dan pastikan setiap anggota kelompok mendapatkan tugas - Ingatkan kepada siswa untuk merapikan alat dan bahan usai percobaan, serta mencuci tangan sebelum kembali ke kelas - Masih dalam kelompok yang sama, siswa melakukan diskusi tentang kegiatan mengembangbiakkan tumbuhan yang baru saj mereka lakukan dengan memperhatikan kriter yang diberikan - Siswa menuliskan hasil diskusi pada kotak yang disediakan	
Kegiatan Akhir	- Guru dan siswa bersama-sama menyimpulkan materi pembelajaran. - Guru mengevaluasi siswa dengan memberikan tes tertulis. - Guru memberikan penguatan kembali tentang materi perkembngbiakan vegetatif buatan	10 menit

H. Penilaian

1. Penilaian Kognitif
    a. Penilaian Produk
    b. Penilaian Proses
2. Penilaian Afektif
3. Penilaian Psikomotorik

I. Sumber Belajardan Media Pembelajaran

1. KTSP 2006/KurikulumSekolah
2. Standar Isi Mata Pelajaran IPA Sekolah Dasar
3. Media Pembelajaran Video Perkembangbiakan Vegetatif Buatan
4. Buku siswa
5. Buku guru

Appendix 13:

Documentation of Activity











Appendix 14 :

Curriculum Vitae

CURRUCULUM VITAE

Name	: Ova Mauliana Zulfa
NIM	: 13140023
Date and place of Birth	: Singaraja, Mei 23th 1996
Address	: Desa Gerokgak ke. Gerokgak ka. Buleleng, Bali
Phone	: 085855540633
Email	: ovamaulianazulfa96@gmail.com
Faculty/ Study Program	: Faculty of Education and Teacher Training/ IslamicPrimary Teacher Education Department
Entrance Year	: 2013

Malang, April 13th 2018

Ova Mauliana Zulfa