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Development of Physics Learning Instrument Based on Hypermedia and Its Influence on Concept Comprehension of Physics Student Abstract. The aim of this research was to know the effect of implementation of learning instrument based on hypermedia on concept comprehension s of physics s with non equivalent posttest-only control group design. randomly.

ICP as experimental class at 30 students was taught by using I hypermedia and Education Class A as control average of score in experiment class was 84,80% with deviation standard at 12,97 and variant at 168,42 whereas the average of score in control class was 51,29% with deviation standard 9,91 and variant at 247,64. From this case, we can conclude that the result of test of concept comprehension of physics student using learning instrument based on hypermedia is different significantly with physic Student's concept comprehension in experiment class is much higher than students in control class to the perception data, students agree with the implementation of learning instrument based on hypermedia and also it can improve students activity by reaching above 90% respectively.

The implementation of learning instrument based on hypermedia is suggested to be developed in the other concepts in physics learning. Nowadays, the development of information and communication technology develop rapidly that provides ease of doing things, including communicating. Ease of communication information and communication technology (ICT). The impact of technological progress in various fields, including in the field of education.

Utilization of information technology aimed at improving the quality of lear improve the quality of education. Formulation characteristics of the learning paradigm of the XXI

century, namely: (1) from a teacher towards student-centered; (2) from one direction towards interactive knowledge; (3) from the insula network environment; (4) from passive to active (6) from the personal to the team-based learning; (7) from the sweeping rules empowering behavior attachments; (8) on a single taste stimulation to the stimulation in all directions; (9) on a single tool to the multimedia tools; (10) on one-way relationship shifts toward the cooperative; (11) of mass production to the needs of customers; (12) on a single conscious effort toward the plural; (13) on one science discipline plural shift towards knowledge; (14) on centralized control toward autonomy trust; (15) of factual towards critical thinking; (16) from delivery of knowledge towards the exchange One of the aim of students to s apply in daily life and as the provisions to pursue their study in high level (Mariati,2012).

These statements means that it is not only for developments and implementatio achievement in learn of physics and rising the students interest. Based on the results of preliminary observations physics student UNM force in 2012 obtained some information that (1) most students a Mathematics, Science, and Computer Education Bandung, October 15th, 2016 Development of Physics Learning Instrument Based on Hypermedia and Its Influence on Concept Comprehension of Physics Student Bunga Dara Amin^{1,a} and Ahmad Swandi^{2, b} 1Makassar State University 2Makassar State University a)bungadaraamin@yahoo.co.id b)ahmadfisika40@gmail.com The aim of this research was to know the effect of implementation of learning instrument based on hypermedia on concept comprehension s of physics students.

The research method used was only control group design. The research sampel was selected from two class class at 30 students was taught by using learning instrumen based hypermedia and Education Class A as control class was taught conventionally.

According to research result, the average of score in experiment class was 84,80% with deviation standard at 12,97 and variant at 168,42 whereas I class was 51,29% with deviation standard 9,91 and variant at 247,64. From this case, we can conclude that the result of test of concept comprehension of physics student using learning instrument based on hypermedia is different significantly with physics student using conventional learning Student's concept comprehension in experiment class is much higher than students in control class to the perception data, students agree with the implementation of learning instrument based on hypermedia and students activity by reaching above 90% respectively.

The implementation of learning is suggested to be developed in the other concepts in physics learning. INTRODUCTION Nowadays, the development of information and communication technology develop rapidly that provides ease of doing things,

including communicating. Ease of communication is inseparable from the role of information and communication technology (ICT).

The impact of technological progress in various fields, including in the field of education. Utilization of information technology aimed at improving the quality of learning. Formulation characteristics of the learning paradigm of the XXI century, namely: (1) from a teacher centered; (2) from one direction towards interactive knowledge; (3) from the insula network environment; (4) from passive to active-investigate; (5) from the virtual / abstract to a context of real world; based learning; (6) from the sweeping rules empowering behavior attachments; (7) from the single taste stimulation to the stimulation in all directions; (8) on a single tool to the multimedia tools; (9) on way relationship shifts toward the cooperative; (10) of mass production to the needs of customers; (11) on a d the plural; (12) on one science discipline plural shift towards knowledge; (13) on centralized control toward autonomy trust; (14) of factual towards critical thinking; (15) from delivery of knowledge One of the aim of students to study physics is to improve their concept comprehension apply in daily life and as the provisions to pursue their study in high level (Mariati,2012).

These statements means that it is not only for developments and implementations of technology in daily life but also as the rules of study achievement in learn of physics and rising the students interest. Based on the results of preliminary observations physics student UNM force in 2012 obtained some information that (1) most students already have a computer or laptop.

Students also frequently access the Internet to PHY-247 Learning Instrument Based on Concept Comprehension The aim of this research was to know the effect of implementation of learning instrument based on students. The research method used was quasi experiment The research sampel was selected from two class arning instrumen based on s was taught conventionally.

According to research result, the average of score in experiment class was 84,80% with deviation standard at 12,97 and variant at 168,42 whereas I class was 51,29% with deviation standard 9,91 and variant at 247,64. From this case, we can conclude that the result of test of concept comprehension of physics student using learning student using conventional learning.

Student's concept comprehension in experiment class is much higher than students in control class. According to the perception data, students agree with the implementation of learning instrument based on hypermedia and students activity by reaching above 90% respectively. The implementation of learning is suggested to be developed in the

other concepts in physics learning.

Nowadays, the development of information and communication technology develop rapidly that provides is inseparable from the role of modern information and communication technology (ICT). The impact of technological progress in various fields, including in the field of education. Utilization of information technology aimed at improving the quality of learning so as to Formulation characteristics of the learning paradigm of the XXI century, namely: (1) from a teacher-centered centered; (2) from one direction towards interactive knowledge; (3) from the insulation to the investigate; (5) from the virtual / abstract to a context of real world; based learning; (7) from the sweeping rules empowering behavior attachments; (8) gle taste stimulation to the stimulation in all directions; (9) on a single tool to the multimedia tools; (10) on way relationship shifts toward the cooperative; (11) of mass production to the needs of customers; (12) on a d the plural; (13) on one science discipline plural shift towards knowledge; (14) on centralized control toward autonomy trust; (15) of factual towards critical thinking; (16) from delivery of knowledge ve their concept comprehension of physics, so they can apply in daily life and as the provisions to pursue their study in high level (Mariati,2012).

These statements means but also as the rules of study Based on the results of preliminary observations physics student UNM force in 2012 obtained some Iready have a computer or laptop. Students also frequently access the Internet to Proceeding International Seminar on Mathematics, Science, and Computer Education 69 Bandung, October 15 obtain the materials to do the job and as a means of social interaction. Internet access is also thought to help students in understanding learning materials.

(2) students un During several physics lecturer at the State University of Makassar have used the medium in the form of presentations are displayed using LCD projectors. However, the media still has shortcomings that are not inte monotonous and centered just to the lecturers. Multimedia can be defined as the use of a combination of several media in conveying information in the form of text, graphic animations, movie, vide and hypertext.

While Fahy (2003) grouped based interactive multimedia functional characteristics, namely; sound, graphics and color, animation, video, hypermedia and hypertext. Hypermedia is one of the latest forms for over two (2) decades (Yuan-Kuang, 1999). According to Jeanne, (2008), Hypermedia is a collection of teaching materials based multimedia computer consisting of text, g learners in sequence according to their own desires while hypertext is a collection of reading material computer that allows learners move from one topic to another associated with the selected Arsyad (2004) stated

Hypermedia can be interpreted as a form and channels that can be used in a process of presenting information.

Hypermedia should be developed into a learning website that is a network that allows to access, view and store documents hypermedia (computer file) that includes the text, graphics, sound, and v the internet (online). According by Fabos (2001) forms of media most recently the hypermedia is a pi Hypermedia is a merger between hypertext and technology multimedia is where the media should contain not only text but also graphics, video and audio as well as providing network structure or link element that allows occurs difference of treatment on each student's ability.

Therefore, even by telephone and cable connection or wifi students can access and use hypermedia, they can do a practicum directly using either a laptop, computer, or tab / ipad. The use of hypermedia will be very helpful with the d worksheets. Independently, students may be able to use hypermedia and devices without being led again by teachers (lecturers) This shows that learning with systems support to develop ideas and concepts of the subject or learning materials, enabling their feedback, provide opportunities to allow taking back the results of the evaluation of learners and learners can interact directly a time and the system works over the internet.

Therefore, learning with hypermedia an interactive multimedia can be developed by simulation and Virtual Real Laboratory for various concepts of quantum physics through the simulation project is adapted from KCVS which are s in Science (KVCS) and can be downloaded on the site www.kcvs.ca. Almost all of the introductory material of quantum physics is abstract and very experiments.

In this study, researchers developed a device based hypermedia learning about black body radiation, photoelectric effect, Compton effect, particle in a box and spectra atomic h The idea of physics concept comprehension development for stu conception is a subject that is constantly changing. (Wenning,2006). (2) learning physics is not about memorizing facts, it is about comprehension and mathematics (Z) a key word in learning process.

Some theories conception base the conclusion are (1) if the purpose of learning is to Mathematics, Science, and Computer Education Bandung, October 15th, 2016 obtain the materials to do the job and as a means of social interaction. Internet access is also thought to help students in understanding learning materials. (2) students understanding of concept was still very low.

During several physics lecturer at the State University of Makassar have used the

medium in the form of presentations are displayed using LCD projectors. However, the media still has shortcomings that are not monotone and centered just to the lecturers. THEORETICAL Multimedia and Hypermedia Multimedia can be defined as the use of a combination of several media in conveying information in the form of graphic animations, movie, video and voice. Interactive multimedia computer based, including hypermedia and hypertext.

While Fahy (2003) grouped based interactive multimedia functional characteristics, namely; sound, o, hypermedia and hypertext. the latest forms of computer-based instruction which has been widely used in America (Kuang, 1999). According to Jeanne, (2008), Hypermedia is a collection of teaching materials based multimedia consisting of text, graphics, animation, video and audio that can be studied learners in sequence according to their own desires while hypertext is a collection of reading material computer that allows learners move from one topic to another associated with the selected Arsyad (2004) stated Hypermedia can be interpreted as a form and channels that can be used in a process of presenting information.

Hypermedia should be developed into a learning website that is a network that allows to store documents hypermedia (computer file) that includes the text, graphics, sound, and v Teaching Based on Hypermedia According by Fabos (2001) forms of media most recently the hypermedia is a pioneer of learning revolution hypermedia is a merger between hypertext and technology multimedia is where the media should contain not only text but also graphics, video and audio as well as providing network structure or link element that allows occurs each student's ability.

Therefore, even by telephone and cable connection or wifi students can access and use hypermedia, they can do a practicum directly using either a laptop, computer, or tab / ipad. The use of hypermedia will be very helpful with the device supports the learning material such as books and student students may be able to use hypermedia and devices without being led again by teachers This shows that learning with systems of hypermedia allows for adaptation between students, provided support to develop ideas and concepts of the subject or learning materials, enabling their feedback, provide opportunities to allow taking back the results of the evaluation of learners and learners can interact directly a time and the system works over the internet.

Therefore, learning with hypermedia an interactive multimedia can be developed by simulation and Virtual Real Laboratory for various concepts of quantum physics through the om KCVS which are simulations developed by The King's Center For Visualization (KVCV) and can be downloaded on the site www.kcvs.ca. Introduction to Quantum Physics Almost all of the introductory material of quantum physics is abstract and very

experiments.

In this study, researchers developed a device based hypermedia learning about black body radiation, effect, particle in a box and spectra atomic hydrogen Concepts understanding sics concept comprehension development for students is based by some theories conception is a subject that is constantly changing. (Wenning,2006). (2) learning physics is not about memorizing facts, it is about comprehension and mathematics (Zhaoyao,2002).

According to that explanations, comprehension is a key word in learning process. Some theories conception base the conclusion are (1) if the purpose of learning is to obtain the materials to do the job and as a means of social interaction. Internet access is also thought to help students of concept was still very low.

During several physics lecturer at the State University of Makassar have used the medium in the form of presentations are displayed using LCD projectors. However, the media still has shortcomings that are not interactive, Multimedia can be defined as the use of a combination of several media in conveying information in the form interactive multimedia computer based, including hypermedia and hypertext.

While Fahy (2003) grouped based interactive multimedia functional characteristics, namely; sound, which has been widely used in America Kuang, 1999). According to Jeanne, (2008), Hypermedia is a collection of teaching raphics, animation, video and audio that can be studied learners in sequence according to their own desires while hypertext is a collection of reading material-based computer that allows learners move from one topic to another associated with the selected sequence itself. While Arsyad (2004) stated Hypermedia can be interpreted as a form and channels that can be used in a process of presenting information.

Hypermedia should be developed into a learning website that is a network that allows to nd store documents hypermedia (computer file) that includes the text, graphics, sound, and video over oneer of learning revolution. ypermedia is a merger between hypertext and technology multimedia is where the media should contain not only text but also graphics, video and audio as well as providing network structure or link element that allows occurs each student's ability.

Therefore, even by telephone and cable connection or wifi students can access and use hypermedia, they can do a practicum directly using either a laptop, computer, or tab / ipad. The evices supports the learning material such as books and student students may be able to use hypermedia and devices without being led again by teachers tation

between students, provided support to develop ideas and concepts of the subject or learning materials, enabling their feedback, provide opportunities to allow taking back the results of the evaluation of learners and learners can interact directly at any time and the system works over the internet.

Therefore, learning with hypermedia an interactive multimedia can be developed by simulation and Virtual Real Laboratory for various concepts of quantum physics through the The King's Center For Visualization Almost all of the introductory material of quantum physics is abstract and very difficult to do real experiments. In this study, researchers developed a device based hypermedia learning about black body radiation, dents is based by some theories: (1) physics conception is a subject that is constantly changing. (Wenning,2006). (2) learning physics is not about memorizing haoyao,2002).

According to that explanations, comprehension is a key word in learning process. Some theories conception base the conclusion are (1) if the purpose of learning is to Proceeding International Seminar on Mathematics, Science, and Computer Education 70 Bandung, October 15 foster the transfer capability in five cognitive domains (understanding, a then the cognitive process resting at transfer capability and emphasized in schools and universities (Anderson, et al, 2006).

(2) one of the purpose of education is to facilitate students to reach comprehension verbally, numerically, positivistic framework and life in groups framework (Gardner,1999). (3) the comprehension is mental process of the adaptation and transformation of science (Gardner,1999). (4) the comprehension is a new device of educational program that reflect competence. (5) the comprehension is a base for students to build insight.

This study uses a model four produce learning instrument based on hypermedia and also uses quasi experiment and descriptive method. Experiment method is used to get test result of concept comprehension while descriptive method used to reach students perceptions on learning using hypermedia. Control group design that conduct in two classes (experiment and control class).

Teacher applied hypermedia in experimental class while in control class was conventional learning. The subjects were students of experiment class (ICP) by 30 people and control class (e 14 people in Makassar State University in the school year 2014/2015. The instrument used in this study are the evaluation ques materials, instruments of student activities, students and instrument of physics concept comprehension by using LKPD .

Data obtained from the assessment of experts, has been analyzed by coding, then description of the continuum of data to determine the assessment categories. Next calculate the content validity of the CVR (Content Validity Ratio) and CVI (Content Validity Index) Reliability values obtained in consultation with the reliability value table. Instrument obtained reliability count is greater than the reliability and then quantitatively analyzed descriptively (Arikunto, 2006).

Steps performed on stage and data analysis include: scoring test understanding of concepts for an experimental class and control class as a whole, do test norm variance data in the two groups. Examine the research hypothesis by using statistical analysis. After that perform data analysis questionnaire responses of students to the use of hypermedia Processing and analysing of data use collected using the One Sample Kolmogorov carried out to see whether the same var Variance is said to be homogeneous if the variance of the data posttest experimental group is equal to the variance of data posttest control group. The test is used in this research is to used, this instrument has in-judgment and tested class of 2011.

To find out about reliability, and ease of distinguishing level. Mathematics, Science, and Computer Education Bandung, October 15th, 2016 foster the transfer capability in five cognitive domains (understanding, applying, analyzing, evaluating and creating), then the cognitive process resting at transfer capability and emphasized in schools and universities (Anderson, et al, 2006).

(2) one of the purpose of education is to facilitate students to reach comprehension verbally, numerically, positivistic framework and life in groups framework (Gardner,1999). (3) the comprehension is mental process of the adaptation and transformation of science (Gardner,1999). (4) the comprehension is a new of educational program that reflect competence. (5) the comprehension is a base for students to build insight.

RESEARCH METHOD Types of Research This study uses a model four-D includes the step of defining, planning, development, and deployment to learning instrument based on hypermedia and also uses quasi experiment and descriptive method. Experiment method is used to get test result of concept comprehension while descriptive method used to reach students perceptions on learning using hypermedia.

The research design used was non equivalentposttest that conduct in two classes (experiment and control class). Teacher applied hypermedia in class while in control class was conventional learning. Subject of Research The subjects were students of experiment class (ICP) by 30 people and control class (e in Makassar State University in

the school year 2014/2015.

Research Instrument The **instrument used in this study** are the evaluation questionnaire media expert, the expert evaluation of of student activities, students perceptions questionnaire to physics learning using hypermedia and instrument of physics concept comprehension by using LKPD . Data Analysis Techniques **Data obtained from the** assessment of experts, has been analyzed by coding, then descri of the continuum of data to determine the assessment categories. Next calculate **the content validity of** the nd CVI (Content Validity Index) (Lawshe, 1975). obtained in consultation with the reliability value table.

Instrument obtained reliability count **is greater than the** reliability of tables, the data obtained through coding by the students, nalyzed descriptively (Arikunto, 2006). Steps performed on stage and data analysis include: scoring test understanding of concepts for **an experimental class and** control class as a whole, do test normality of the data distribution, do test **the homogeneity of variance** data in the two groups. Examine the research hypothesis by using statistical analysis.

After that perform data analysis questionnaire responses of students to the use of hypermedia ing and analysing of data use statistical test by stages; fist, normality test data distribution for data collected using the One Sample Kolmogorov-Smirnov Test. Second, test homogeneity of variance of the two groups carried out to see whether the same variances of two independent variables, using Levene Test (Suyanto, 2009).

Variance **is said to be homogeneous if the variance of the** data posttest experimental group is equal to the variance of is **used in this research** is test understanding **of the concept of** physics student in form of essay judgment and tested by expertrs. Experiments conducted to s 2011. To find out about the quality of understanding of concept of analyzing items include: validity, reliability, and ease of distinguishing level.

pplying, analyzing, evaluating and creating), then the cognitive process resting at transfer capability and emphasized in schools and universities (Anderson, et al, 2006). (2) one of the **purpose of education is** to facilitate students to reach comprehension that can be revealed verbally, numerically, positivistic framework and life in groups framework (Gardner,1999). (3) the comprehension is mental process of the **adaptation and transformation of science** (Gardner,1999).

(4) the comprehension is a new of educational program that reflect competence. (5) the comprehension is a base for students to build insight. **planning, development, and deployment to learning instrument based on hypermedia and** also uses quasi

experiment and descriptive method. Experiment method is used to get test result of concept comprehension while descriptive method used to reach non equivalent posttest-Only that conduct in two classes (experiment and control class).

Teacher applied hypermedia in The subjects were students of experiment class (ICP) by 30 people and control class (education class A) by tionnaire media expert, the expert evaluation of physics learning using hypermedia Data obtained from the assessment of experts, has been analyzed by coding, then described qualitatively and of the continuum of data to determine the assessment categories.

Next calculate the content validity of the obtained in consultation with the reliability value table. Instrument is said to be reliable if through coding by the students, Steps performed on stage and data analysis include: scoring test understanding of concepts for an ality of the data distribution, do test the homogeneity of variance data in the two groups. Examine the research hypothesis by using statistical analysis.

After that perform statistical test by stages; fist, normality test data distribution for data Smirnov Test. Second, test homogeneity of variance of the two groups iances of two independent variables, using Levene Test (Suyanto, 2009). Variance is said to be homogeneous if the variance of the data posttest experimental group is equal to the variance of ing of the concept of physics student in form of essay. Prior .

Experiments conducted to some students education concept of analyzing items include: validity, Proceeding International Seminar on Mathematics, Science, and Computer Education 71 Bandung, October 15 Various software used in the manufacture of these simulations media that Flash Decompiler for adapting the physics simulation that was dow <http://www.kcvs.ca>. The dominant software used is Lectora to the display settings Media program.

This media development can solve the problems experienced by the students learn and time. In the process of learning to use hypermedia Hypermedia program created, containing material that comes with images, animations, and interacti As for the initial appearance of this hypermedia as follows: (a) introductory of quantum physics. (a) Initial appearance of hypermedia. (b) Hypermedia of Black body spectra experiment.

(c) Hypermedia of Photo electric effect experiment. (d) Hypermedia of Particle in a potential box experiment. (f) Hydrogen atomic spectra experiment Evaluation Instrument Hypermedia The evaluation of the hypermedia conducted by subject matter experts and media expert validation analysis showed that the hypermedia valid and reliable for all aspects as in the table below: Tabel 1. The analysis result of No.

1 Quality of display 2 attraction 3 Technic Mathematics, Science, and Computer Education Bandung, October 15th, 2016 RESULTS AND DISCUSSION Hypermedia Various software used in the manufacture of these simulations media that Flash Decompiler for adapting the hat was downloaded from The King's Center for Visualization in Science (KVCS) <http://www.kcvs.ca>. The dominant software used is Lectora to the display settings Media program.

This media development can solve the problems experienced by the students learn more easily and does not require a lot of costs and time. In the process of learning to use hypermedia-based web hosting with domain fisikakuantum.host.56.com. Hypermedia program created, containing material that comes with images, animations, and interacti As for the initial appearance of this hypermedia as follows: (b) . (a) Initial appearance of hypermedia. (b) Hypermedia of Black body spectra experiment. (c) Hypermedia of Photo electric effect experiment.

(d) Hypermedia of Compton effect experiment. (e) Hypermedia of Particle in a potential box experiment. (f) Hydrogen atomic spectra experiment Evaluation Instrument Hypermedia The evaluation of the hypermedia conducted by subject matter experts and media expert validation analysis showed that the hypermedia valid and reliable for all aspects as in the table below: The analysis result of validation and reliability of hypermedia Aspek Various software used in the manufacture of these simulations media that Flash Decompiler for adapting the or Visualization in Science (KVCS) <http://www.kcvs.ca>.

The dominant software used is Lectora to the display settings Media program. This media more easily and does not require a lot of costs based web hosting with domain fisikakuantum.host.56.com. Hypermedia program created, containing material that comes with images, animations, and interactive simulations. (c) (d) (e) (f) Figure 1. Trial packet of .

(a) Initial appearance of hypermedia. (b) Hypermedia of Black body spectra Hypermedia of Compton effect experiment. (e) Hypermedia of Particle in a potential box experiment. (f) Hydrogen atomic spectra experiment The evaluation of the hypermedia conducted by subject matter experts and media experts.

The results of validation analysis showed that the hypermedia valid and reliable for all aspects as in the table below: validation and reliability of hypermedia Persentase (%) 95,8 91,7 94,5 Proceeding International Seminar on Mathematics, Science, and Computer Education 72 Bandung, October 15 Average Tabel2. The analysis result of No.

1 Material/Concept 2 Language 3 presentation Tabel3. The analysis result of No. 1 Material/Concept 2 Language 3 presentation Tabel4.

The analysis result of validation and reliability of book based on hypermedia No. 1 Material/Concept 2 Language 3 presentation The data on students' perceptions of learning hypermedia learning to use the device as follows: No Indic 1 Facilities of learning instrument based on hypermedia 2 Study attraction by using learning instrument based on hypermedia 3 Study activity by using learning instrument based on hypermedia Average Based on the assessment of students of students in the top 90% indicate that the students strongly agreed with learning on hypermedia.

Students interested in learning hypermedia simula is easy to understand the subject matter, as well as enjoy learning with the help of hypermedia. This is consistent with research Yulianti, et. al., (2012) that the application of Hypermedia based learn abilities of students who describe the feelings, interests, and attitudes towards the teaching process.

Student's Understanding of C The table below shows the percentage of analysis result score of LKPD for all unit. Table6. Percentage of analysis result score of LKPD for all unit Class Unit 1 Experiment class 90,83 Control class 70,50 Mathematics, Science, and Computer Education Bandung, October 15th, 2016 The analysis result of validation and reliability of material in hypermedia Aspek The analysis result of validation and reliability of LKM based on hypermedia Aspek .

The analysis result of validation and reliability of book based on hypermedia Aspek Student Perceptions The data on students' perceptions of learning hypermedia learning to use the device as follows: Table 5. Perception of Students Indicator Percentage of learning instrument based on hypermedia 90,33 Study attraction by using learning instrument based on 92,35 Study activity by using learning instrument based on hypermedia 91,84 Average 91,03 of students towards learning in using hypermedia, the data shows that the students strongly agreed with learning by using learning instrument hypermedia.

Students interested in learning hypermedia simulation display, easy to run interactive simulations, it is easy to understand the subject matter, as well as enjoy learning with the help of hypermedia. This is consistent with research Yulianti, et. al., (2012) that the application of Hypermedia based learn abilities of students who describe the feelings, interests, and attitudes towards the teaching process.

Student's Understanding of Concept The table below shows the percentage of analysis

result score of LKPD for all unit. Percentage of analysis result score of LKPD for all unit
Unit 2 Unit 3 Unit 4 87,98 89,68 66,58 43,58 41,58 44,14 94 validation and reliability of
material in hypermedia Percentage (%) 97,0 93,8 91,7 validation and reliability of LKM
based on hypermedia Percentage (%) 97,0 93,8 91,7 .

The analysis result of validation and reliability of book based on hypermedia Percentage
(%) 97,0 93,8 91,7 The data on students' perceptions of learning hypermedia learning to
use the device as follows: Percentage (%) 90,33 92,35 91,84 91,03 , the data shows that
the perception by using learning instrument based **tion display, easy to run** interactive
simulations, it is **easy to understand the subject matter**, as well as **enjoy learning with
the help** of hypermedia.

This **is consistent with research** Yulianti, et. al., (2012) that the application of Hypermedia
based learning can enhance affective abilities of students who describe the feelings,
interests, and attitudes towards the teaching process. The table below shows the
percentage of analysis result score of LKPD for all unit.

Percentage of analysis result score of LKPD for all unit Unit 5 88,95 57,06

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