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DIGITIZATION OF LEARNING IN THE RURAL SCHOOL

(Computer Based Learning Implementation at SMP Cendikia Sukahegar Sukaluyu Cianjur West Java Indonesia)

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Abstract

Digitization of learning is one of the todays' challenges being faced by Indonesian schools, including rural schools. This reasearch aims to implement and measure the effectiveness of computer based learning at SMP Cendikia Sukahegar, recognize its challenges, and find the appropriate computer based learning model for them. The method used is *experimental research* based on descriptive qualitative approach, using instruments of observation, interview, and document analysis. The results of this study show that computer based learning at SMP Cendikia Sukahegar improves their student learning outcomes. The appropriate computer based learning model is *instructional game*. Meanwhile, the problems faced in the implementation of computer based learning are related to human resources, facilities, and supporting policies from the principals.
Keywords: Computer based learning, digitization, rural school

Abstrak

Digitalisasi pembelajaran merupakan salah satu tantangan yang saat ini dihadapi oleh sekolah-sekolah di Indonesia, termasuk sekolah pedesaan. Penelitian ini bertujuan untuk mengimplementasikan dan mengukur keefektifan pembelajaran berbasis komputer di SMP Cendikia Sukahegar, mengenali tantangannya, dan menemukan model pembelajaran berbasis komputer yang sesuai untuk mereka. Metode yang digunakan adalah penelitian eksperimental berdasarkan pendekatan kualitatif deskriptif, dengan menggunakan instrumen observasi, wawancara, dan analisis dokumen. Hasil penelitian ini menunjukkan bahwa pembelajaran berbasis komputer di SMP Cendikia Sukahegar dapat meningkatkan hasil belajar siswa. Model pembelajaran berbasis komputer yang sesuai adalah permainan instruksional. Sedangkan permasalahan yang dihadapi dalam pelaksanaan pembelajaran berbasis komputer terkait dengan sumber daya manusia, fasilitas, dan kebijakan pendukung dari kepala sekolah.
Kata kunci: Pembelajaran berbasis komputer, digitalisasi, sekolah pedesaan

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I. PENDAHULUAN

According to the 2005-2025 National Long Term Development Plan (RPJPN) phase III (2015-2019). Strengthening development comprehensively by emphasizing the development of economic competitive excellences based on available natural resources, qualified human resources, and the ability of science and technology. Therefore the education theme in the Strategic Plan of the Ministry of Education and Culture of the Republic of Indonesia 2015-2019 is Regional Competitiveness. Regional competitiveness could be translated as the quality of educational implementation and outcomes which compete on a cross countries scale.

Seeing the geographical condition in Indonesia as an archipelagic country, with all its adventages and challenges. It is not easy to make the regional competitiveness come true, but should be achieved for the nation sovereignty and future. This is in line with Jack Ma's mind that was stated in the 2018 World Economic Forum meeting, that education field is the big challenge of this century. If currently we do not innovate the way we educate our children, in 30 years later we are going to face the serious troubles for sure.

Among Indonesia's biggest challenges to realize regionally competitive education implementation and outcomes is improving quality of the junior high schools in rural areas. The places are not easy to reach telephone network and internet connection, far away from unban areas, and very limited resources.

In the other hand, to embody students who are regionally competitive, computer based learning implementation to encourage their technological skill is a must as well as a demand of century that must be addressed. It is the answer of why the study of digitization of learning in rural schools is very important and strategic, to encourage the equally improvement of regionally competitive educational implementation and outcomes in all areas of Indonesia.

Based on the said background, this research aims; 1. To find out the effectiveness of the computer based learning implementation at SMP Cendikia Sukahegar Cianjur West Java. 2. To find out the apropriate computer

based learning model that could be applied at all junior high schools with the same category (rural area).

Hopefully this research will be usefull in developing educational quality of junior high schools in all rural areas of Indonesia, through applicable and effective computer based learning model for them. There are many studies have raised learning digitization topics such as *virtual class*, *e-learning, etc.* Unfortunately the writings are often not applicable for the rural schools. Coming with this novelty (digitization of learning in rural schools), this research is proposed.

II. METODE

The method used is *experimental research*. Research activities addressed to assess the effect of an educational treatment/action/treatment on student behavior, or test a hypotheses about the effect of the action when it compared to other action (Supardi, 2011). Referring to the said experimental research definition, the general purpose of an experimental research is researching the the effect of a particular treatment on a particular group compared to another group with different treatment.

In this case an experiment is intended to assess/prove the effect of computer based learning implementation on student learning outcomes at SMP Cendikia Sukahegar. The goal addressed is to test a hypotesis about the effect of this treatement when compared to lerning implementation that is not computer based.

In this research two groups of student will be formed. The first is group that implement computer based learning as an experimental group. The second one is group that implement non-computer based learning as a control group. The difference of learning outcomes between two groups will be analyzed in the next step. If the computer based learning implementation is proven more effective in improving student learning outcomes, a computer based learning model for junior high schools which have the same category will be formulated. Data collection methods are observation, interview, and document analysis.

III. HASIL DAN PEMBAHASAN

A. Computer Based Learning

Based on the Law of the Republic of Indonesia number 20 year 2013 concerning the National Education

System. Chapter I, article 1, paragraph 20, states that learning is an interaction process of student with educators and learning resources in a learning environement. It means that learning process not only requires interaction among the teacher and student, but also involves learning resources. Student not only receive information from teacher, but also being information seeker and material researcher of other sources, without eliminating the teacher role as a learning designer and facilitator.

Learning resource can be interpreted as a material reference as well as learning media used by student according to related lesson plan designed by learning facilitator before. Learning media means a supporting device/equipement to facilitate teacher in delivering learning material to the student. The supporting device/equipement can be in the form of environment, graphic tools, photographics, or electronic devices (including computer) to enrich student learning experience sistematically as teacher planned.

Computer based learning supposed to help teacher in conducting active, innovative, environmentally, creative, effective, and fun learning. Learning that involves all its elements actively, encourages the growth of participants' creativities, supports in achieving addressed competencies effectively according to school curriculum requirements, and it is implemented in a fun way.

B. Computer Based Learning Implementation

Because of limited schools facilities available, SMP Cendikia Sukahegar has not applied yet a computer based learning. Therefore the engaged teachers preparation to run and test computer based learning was absolutely needed there.

Group A of VII graders at SMP Cendikia Sukahegar became the experimental group which computer based learning implemented there, and group B at the school became the control group, which computer based learning was not implemented. The material chosen was *characteristics of living things* as one of Biology (IPA) basic competences must be masterized by student. The selection of classes and materials refers to difficulty of SMP Cendikia Sukahegar to reach a good

score for the said subject on the National Standard School Examination.

The application used as a learning media of computer based learning implementation was Rumah Belajar. Lerning support application prepared by the Ministry of Education and Culture of Republic of Indonesia to support schools learning quality improvement. This application was chosen because it has following adventages:

1. It could be used in offline mode, applicable to be run in the area without telephone network and internet connection.
2. It provides a combination of media (text, graphics, photos, videos, audios, and animations).
3. It provides exercises in the form of game.
4. It supports more in conducting interactive learning

The stages of computer based learning preparation performed by the 7th grade teachers at SMP Cendikia Sukahegar were :

1. Understanding the material as of stated in syllabus and reference book.
2. Trying to use computer (laptop) and Rumah Belajar application on the said material.
3. Reviewing and revising the lesson plan with school principal.
4. Preparing the classroom as of requested by revised lesson plan.

In the implementation of computer based learning lesson plan. After conducting preliminary activities, teacher devided student into two groups, and explained the material. The preliminary explanation was carried out by demonstration of three plant types provided. The plants were taken from school garden with principal acknowledgement.

In the next step, teacher invited group leaders to be seated around teacher's desk to open Rumah Belajar application alternately on provided computer. While other student read text books on their own desks, the student around teacher's desk were assigned to learn the material on Rumah Belajar application, including completing its exercises.

The student who had learned on Rumah Belajar application were assigned to describe what they understood to their friends in their own

group. Discussion among them was running warm. The teacher walked around them to supervise how student discussion was. To strengthen student experience of *characteristics of living things*, the teacher invited student to observe plants and animals around their school once student group discussion had been done. Every group was assigned to observe their characteristics.

In the last session of learning, the teacher brought student back to the classroom. He stimulated student to present what they got from the learning. Four students came forward to explain their learning experiences. Teacher closed the learning activities by her rewarding and confirmation on student performances, also conclution of the material. The teacher conducted learning evaluation before leaving classroom.

C. The Effectiveness of Computer Based Learning

The effectiveness of computer based learning implementation was measured by the gap between group A learning outcomes at SMP Cendikia Sukahegar as an experimental group and group B at the same school which implemented non-computer based learning as a control group. The difference of two groups learning outcomes became a persentage of the effectiveness of computer based learning on non-computer based learning.

The group A and B learning outcomes evaluation at SMP Cendikia Sukahegar was conducted by answering ten questions by student indvidually. Every question had the same score value, which was 10. The available score range was 0-100. When student answered the 10 questions correcly, it meant that student achieved 100 (maximum score).

The average score of group A (experimental group) learning outcomes evaluation at SMP Cendikia Sukahegar was 80. Meanwhile group B (control group) at the same school got 72 by average. It showed that computer based learning implementation at experimental group was proven to be 8 % more effective than non-computer based learning.

D. Challenges in Computer Based Learning Implementation

There were many challenges in implementing computer based learning at SMP Cendikia Sukahegar. The first challenge was students' abilities in

using computer. In learning session when student group leaders were assigned to operate Rumah Belajar application, all of them need to learn how to operate laptop before. It made learning activities required time much more than it was planned.

Limited facilities was other problem to conduct computer based learning at SMP Cendikia Sukahegar. Implementing computer based learning which was supported only by a laptop for two groups was not easy way. Not every student would have a good chance to interact with Rumah Belajar application. The applicable way was deviding student into two groups and giving them a chance to use computer alternately. This way truly made learning activities duration longer and student limitation of computer based learning experience. Principal role to engage external supports were really needed to implement computer based learning at SMP Cendikia Sukahegar continuously.

E. Appropriate Computer Based Learning Model

Computer based learning that used Rumah Belajar application at SMP Cendikia Sukahegar was proven more effective than non-computer based learning. One of the things that stimulated students' interests in using Rumah Belajar application was that the application offered exercises in the form of game.

Based on research finding, the appropriate computer based learning model for rural school such as SMP Cendikia Sukahegar was *instructional game.* A learning model focuses more on its media in the form of *game*. The model states that a fun learning is main requirement that must be taken to achieve desired learning outcomes. It could be realized by educated games as well as learning outcomes planned by its designer (teacher).

Game takes a significant role in *instructional game* learning model. Students seek and receive many informations such as material principle, fact, process, and knowledge structure. Even more, it trains user in problem solving, decision making, partnership, regulation obedience, and accustoming positive competition. In the same time, *game* provides interesting challenges for students.

IV. SIMPULAN

According to the research finding, computer based learning used Rumah Belajar application implemented at SMP Cendikia Sukahegar Cianur West Java was proven to be 8 % more effective than non-computer based learning there. The appropriate computer based learning model for rural school such as SMP Cendikia Sukahegar was *instructional game*.

Computer based learning will not be effective without teacher's detail preparation as the student learning architect and facilitator. Supporting policies by school principal is needed to civilize computer based learning at school effectively and continuously.

DAFTAR PUSTAKA

Azhar Arsyad. (2019). *Media Pembelajaran.* Depok: Rajawali Pers.

Burhan Bungin. (2017). *Penelitian Kualitatif.* Jakarta: Kencana.

Hamzah B. Uno. (2012). *Model Pembelajaran (Menciptakan Proses Belajar Mengajar yang Kreatif Dan Efektif).* Jakarta: Bumi Aksara.

Hamzah B. Uno dan Nurdin Mohamad. (2017). *Belajar dengan Pendekatan PAILKEM*. Jakarta: Bumi Aksara.

Made Wena. (2011). *Strategi Pembelajaran Innovative Kontemporer, Suatu Tinjuan Konseptual Operasional*. Jakarta Timur: PT Bumi Aksara.

Munadi Yudhi. (2010). *Media Pembelajaran (Sebuah Pendekatan Baru)*. Jakarta: Gaung Persada.

Munir. (2017). *Pembelajaran Digital.* Bandung: Alfabeta.

Rencana Strategis Kementerian Pendidikan dan Kebudayaan 2015-2019

Rusman, dkk. (2012). *Pembelajaran Berbasis Teknologi Informasi dan Komunikasi.* Jakarta: Rajawali Pers.

Rusman, kurniawan deni, dkk. (2012). *Pembelajaran Berbasis Teknologi, Informasi dan Komunikasi: Mengembangkan Profesionalan Guru.*

Sudjana. (1994). *Desain dan Analisis Eksperimen*. Bandung: Penerbit Tarsito.

Sukardi. (2004). *Metodologi Penelitian Pendidikan*. Jakarta: Bumi Aksara.

Sutrisno Hadi. (2004). *Metodologi Research : untuk menulis laporan, skripsi thesis dan disertasi*. Yogyakarta: Penerbit Andi