

Analysis of e-Learning Creativity in Digital Content Presentation

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This study aims to explain the creativity of students in presenting material with digital content in web-based e-learning. This study uses a qualitative descriptive approach with subjects being students who take lessons using e-learning, while the object of research is digital content. Sources of research data are obtained through observation, interviews, and documentation. Data were analysed using Milles Hubberman's analysis, including reduction, display, and verification. The validity of the data is verified by triangulating sources, techniques, and time. The results showed that the creativity of students was seen through the level of smooth thinking obtained by 75%, flexible thinking by 85%, original thinking and detailed thinking by 70%. This shows that students are still lacking in developing ideas or ideas and are still lacking in detail in doing their work. Creativity can be developed through four aspects, namely person, process, product, and press. The e-learning stages include preparation, incubation, illumination, and verification.

Key words: *Creativity, e-Learning, Digital Content*

Introduction

Learning in the digital 4.0 era requires creativity in the delivery of material, therefore through e-learning support, students are given the means to explore their ability to create learning material created together in groups to present themes by integrating elements such as sound, pictures and texts which are then packaged through learning videos to foster learning motivation and increase students' creativity in creating digital content. Learning is involving, obtaining, and modifying knowledge, skills, strategies, beliefs, attitudes, and behaviours. Learning can be done independently through learning e-Learning by packaging material into digital content, and this can motivate learning to learners and can foster creativity in students. Learning can be defined as a process in which an organism changes its behaviour as a result of experience.

E-learning, according to Soekartawi in Hamzah & Lamatenggo (2010) and Anderson (2008), states that online learning is learning whose implementation is supported by technology services such as audio, videotape, teleconference and the web, all of which all use online computer media. Web-based learning requires creativity in its presentation and is a demand in learning innovation; students are active, critical and have a great sense of curiosity as well as boredom which can reduce motivation to learn if the delivery of material is still presented manually – namely lectures – and is still dominated by the instructor. Learning must include three domains of learning, namely, cognitive, affective, and psychomotor, to improve student learning creativity (Roberts, 2004; Stephenson, 2018; Harasim, 2017).

Some expert opinions about creativity according to Munandar (2009) say that creativity is the result of interaction between individuals and their environment; a person influences and is influenced by the environment which he/she is in. Woolfolk (2009) defines creativity as the ability to produce original, appropriate, and useful work. Next, Woolfolk explained there are three sources of creativity, namely: 1) relevant skills including various talents and competencies that are useful for working in the area, 2) relevant processes of creativity including various work habits and personality traits, and 3) intrinsic task motivation or curiosity or fascination which are profound about the task. Rhodes in Munandar (2009) concluded that in general, creativity is formulated in terms of personal (person), process, and product. Creativity can also be seen from the personal and environmental conditions that encourage (press) the active behaviour of individuals. The personal definition is that creativity is a unique meeting point between three psychological attributes – intelligence, cognitive style, and personality/motivation. The Process definition includes all creative and scientific processes from finding problems to delivering results with steps including the stages of preparation, incubation, illumination, and verification. Product definition is creativity centred on the results of creative actions that emphasise the elements of originality, novelty, and meaningfulness. Whereas the Press's definition is that creativity is a form of initiative that is manifested by the power to break away from the usual line of thinking. So in this study will analyse how e-learning learning creativity in presenting digital content is seen from four aspects of creativity, including smooth thinking, flexible thinking, original thinking, and detailed thinking.

Literature Review

E-Learning Creativity

Learning is essentially an activity that expects changes in behaviour in the individual who is learning. From the concept of learning comes the term learning, which can be interpreted as an effort to teach students to learn (Atan & Rosli, 2019; Made, 2004). According to Wahono (2008) and Mayer & Alexander (2016), e-learning learning as the main process generally involves three activities, namely content, packaging, and distribution. Content is material prepared by teachers. The packaging is the packaging of material offered using applications

and distributions, which are presentations to students that are carried out locally and globally with the help of information technology such as e-learning. Learning e-learning is an effort in web-based learning innovation that has been used as an additional form of classroom learning that can be done face-to-face (directly) or indirectly. E-learning is essentially a form of conventional learning as outlined in a digital format and presented through information technology (Deni, 2011; Kanuka, 2008). Hamalik (2005) states that the learning objectives are a description of the behaviours expected to be achieved by students after learning takes place. The chart below shows the integration of basic traits in student learning. Three main components of each fundamental are shown in Figure 1 (Heritage et al., 2013).

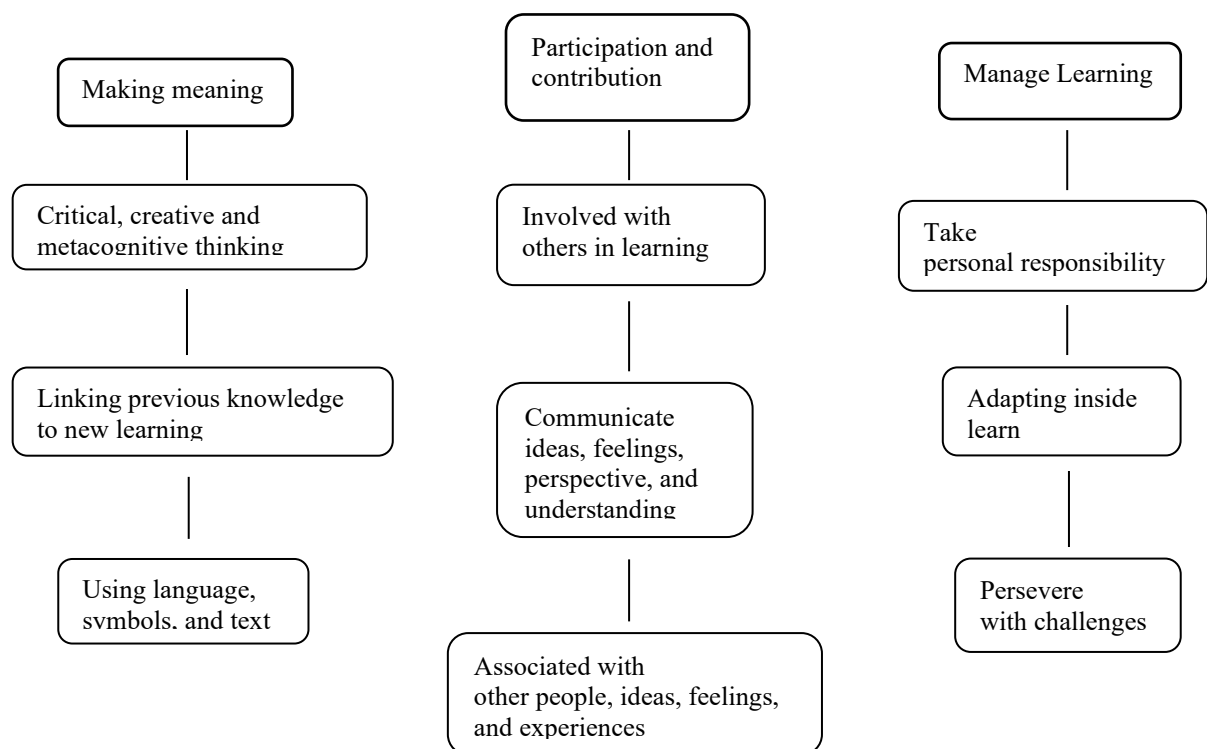


Figure 1: Three Main Components of Learning Fundamentals

Explanation:

1. Making Meanings

The meaning of making refers to the process of making sense of information, experience, and ideas through creative, critical, and metacognitive use of thinking abilities. When students use this thinking ability, they can do it in evaluating information, reasoning, solving problems, analysing and constructing arguments, making decisions, and organising their learning.

2. Participation and Contribution

Engaging with others in learning involves working together to obtain information, share and discuss ideas and interpretations, and get feedback. Participating in and contributing

to the learning community enables students to do so as a process is built together where mistakes are understood as potentially valuable opportunities for further learning.

3. Managing Learning

Managing learning involves self-direction and taking the initiative. In the process of managing their learning, students see themselves as active, able to learn to take risks with and work on complex problems. When working with others, they know when to lead, when to follow, and when and how to act independently.

Noesgaard & Rikke (2015) and Leung (2003) revealed that research on the effectiveness of e-learning has increased in recent years. This is mainly due to an increase in IT in learning, even though e-learning learning cannot be separated from conventional learning. Teachers must be able to combine e-learning learning with conventional learning, or often we are familiar with hybrid learning. Lynn (2014) and Bains (2010) define Hybrid Learning or Blended Learning as referring to a combination of learning methods based on e-learning (electronic learning) with face-to-face learning methods or conventional methods.

De Bono in Barracks & Doppelt (2000), defines four levels of achievement of the development of creative thinking skills, namely thinking awareness, thinking observation, thinking strategies, and thinking reflection. Table 1 describes the level of creative thinking from De Bono.

Table 1. De Bono's level of creative thinking

<p>Level 1: Awareness of Thinking</p> <p>It is a low level of creative thinking because it only expresses the individual's awareness of the need to complete the task</p>
<p>Level 2: Observation of Thinking</p> <p>Demonstrates higher creative thinking because individuals must show how they observe an optional implication, such as the use of particular components or programming algorithms.</p>
<p>Level 3: Thinking Strategy</p> <p>It is the next higher level because individuals must choose a strategy and coordinate between the various explanations in the task. They must decide how many levels of detail they want and how to present the sequence of actions or logical conditions of the system of work.</p>
<p>Level 4: Reflection of Thinking</p> <p>It is the highest level because individuals must test the properties of the final product compared with a set of goals. Explain conclusions about success or difficulties during the development process, and give suggestions for improving the planning and construction process.</p>

According to Worthington in Mahmudi (2010), measuring the ability of individual creative thinking can be done by exploring the work of individuals who present their creative thinking processes that can be in the form of work-related tasks, problem solving or oral answers to questions. Munandar (2009) gives an understanding of each of the abilities of creative thinking, namely:

- a. Fluency thinking skills are defined as skills in generating many relevant ideas or answers and a smooth flow of thought.
- b. Flexible thinking skills (flexibility) are defined as skills in generating ideas or questions that vary, are able to change the way of approach, and have different directions of thought.
- c. Original thinking skills are defined as skills in giving unusual answers to others, which are rarely given by most people.
- d. Elaboration thinking skills are defined as skills in developing, adding, enriching an idea, or detailing details and expanding an idea.

Munandar (2009) said that the characteristics of creativity were as follows: happy to look for new experiences, have fun in doing difficult tasks, have initiative, have high perseverance, tend to be critical of others, dare to express opinions with confidence, always curious, sensitive or sensitive, energetic and tenacious, likes multiple tasks, belief in yourself, has a sense of humor, has a sense of beauty and has a vision of the future and is full of imagination. Thus creativity is related to the activity in learning, where students must be able to make the most of the learning resources available in the surrounding environment, both inside and outside the classroom. Mayer (2009) and Zheng & Zheng (2009) said learning using multimedia is learning that is presented through words and images that aim to promote learning; students who are taught in this way will get a better understanding compared to just through words alone. The difference of this research with the previous one is on the creativity of students in presenting material using multimedia elements, including sound, images, text, animation that is packaged in the video into digital content so that the delivery of material can be more interesting and increase students' learning motivation.

Methods

This research is descriptive qualitative research that emphasises the meaning of the generalisation. The study was conducted on students of the faculty of Education at SGD Bandung State Islamic University in the Learning Media course in 2019. The research subjects were students who used e-learning in semester III of class A totalling 30 people, while the object of the study was e-learning learning. Data collection is through observation, interviews, and documentation. Then the data analysis uses the miles Huberman method, namely data reduction, data display, and data verification. While the validity of the data uses triangulation of sources, techniques, and time.



In this study, several stages were carried out, as explained by Wallas as quoted by Munandar (2009), stating that the creative process took place through four stages, namely preparation (preparation), the incubation (incubation), illumination (illumination) and verification (verification).

The preparatory stage is the stage of identifying and collecting information to solve the problem. In this identification process needs analysis is used and obtained several things including that learning e-learning is an innovation that is indeed needed in the current digital era, where learning can be done anytime and anywhere and integrated with information technology that can facilitate the learning process; this can reduce the saturation of learning and can foster motivation and creativity in learning. At this stage students also begin to collect/prepare materials needed in the presentation of digital content including materials, learning resources, tools/materials such as software for making videos, helping people to deliver material, in turn appointing one person to editing, creating material on slides, adding video elements, sound/background music to finishing content. This requires collaboration and creativity to provide ideas on the presentation of digital content material so that the intent of the material can be conveyed to the audience well – that is, easily understood and interesting.

At the incubation stage, the problem-solving process is contemplated until inspiration or ideas arise to solve the problem. At this stage, students look for ideas and discuss various alternative solutions to the problems that will be found so that they can work together in a group so that it will foster togetherness and eliminate individual egoism. Joint responsibility is the main prerequisite for the successful presentation of this digital content material because in it, there is a division of tasks to each individual so that good work can be displayed that can be accepted by a listening audience. In presenting this material, it is also necessary to add a quiz so that the material can be evaluated as far as it can be understood by the audience: if it is not yet understood then the material can be repeated and then answering the quiz be continued as a form of evaluation of the understanding of the material presented.

Next to the illumination stage, ideas are raised in the concrete steps of problem solving. At this stage, students are required to be able to solve problems encountered in learning, especially when they have to make material that is packaged as digital content, so creativity is needed to present learning material by integrating multimedia elements such as sound, text, images, videos so that it will produce interesting material. The use of additional software applications to package content also needs to be adjusted so that the process of making videos is not difficult because unfamiliar software will also inhibit digital content from being made: this needs to be considered so that the presentation of material can facilitate the work and not hamper the manufacturing process.

In the verification stage, ideas, and problem-solving strategies are critically evaluated and confronted with reality. At this stage, students are given the opportunity to evaluate the work

made, and if there is something less interesting it can be improved again after getting input from other participants. After the stages are carried out, e-learning learning can be viewed on the <https://elearning-ambarsrilestari.web.id> page, and the material is packaged in digital content, which can be viewed on the youtube channel at https://www.youtube.com/results?search_query=amber+sri+sustainable.

Results and Discussion

The results of the study were carried out through the initial step of observation while learning and then assignments were given to students to make the presentation of the material in groups. Observations are carried out by way of students delivering the material with knowledge that they have previously understood, and the results after being assessed are that most of the material deliveries are made simply without any additional elements, and only use PowerPoint. From the results of these observations in the learning of students they were divided into four groups, each group consisting of five people, then the four groups were divided into two groups. Two groups are given the task of presenting material with digital content, and the other two groups present material simply using PowerPoint. So there are elements of creativity that are judged, including thinking smoothly, thinking flexibly, thinking originally, and thinking in detail. Then it can be seen from the graph below that shows the creativity of students:

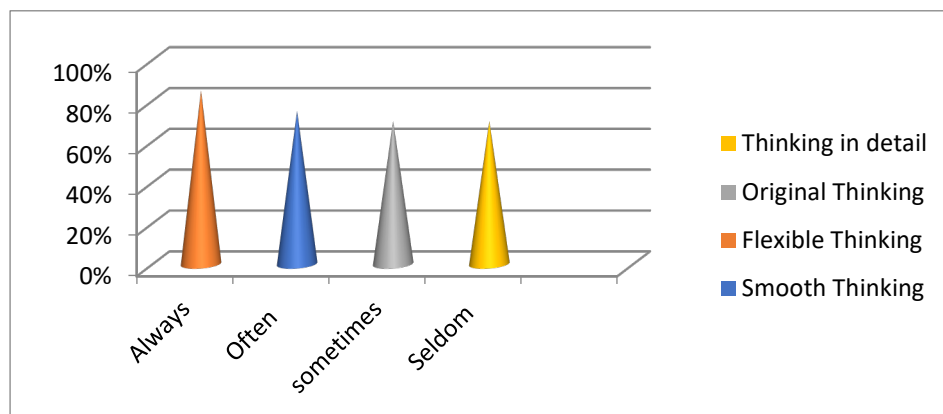


Figure 2. Aspects of Creativity

From the graph in Figure 2, it is explained that some aspects of creativity by students in the presentation of digital content include:

- Smooth thinking is how students can generate ideas that are relevant in presenting material with digital content, with the result students often provide relevant ideas by 75% – meaning students quite often give ideas about the relevance of the material
- Flexible thinking, which is how students produce lots of diverse ideas and can use different methods or approaches as well as innovative ways of thinking: the result is students always give diverse ideas, amounting to 85% – meaning students are flexible enough to use a variety of ways as an idea in achieving creativity

- c. Original thinking is how students can give answers that are not the same as from other people: the result is students sometimes give solutions that are different from others by 70% –meaning that in general students' answers to a topic are the same or not different
- d. Thinking in detail, that is how students can develop, add an idea/idea can also detail in detail in work the result is students rarely develop ideas or ideas, by 70% meaning in the work of students less detailed or detailed.

So from this graph, it can be analysed that students in general are either given assignments by presenting material with multimedia or presenting material simply; in the element of creativity many students still lack originality and detail in work done; this is due to lack of willingness to develop ideas or hold ideas that are different from the others, meaning that they prefer to follow what is easy to emulate to make work efficient, even though they don't see the quality of the work. This can be seen from the graph that as many as 70% of students think original and think in detail even though it is good enough.

The results of this study are in accordance with what has been explained; that the ability to think creatively is needed by students given that today science and technology are developing very rapidly allowing anyone to obtain information quickly and easily from various sources around the world. The characteristics of creative thinking include: Fluency, Flexibility, Originality, and Elaboration (Arifani, Sunardi, & Setiawani, 2015). According to Torrance in Jazuli (2009), in e-learning fluency, students in using web-based learning have mastered the few obstacles such as Internet access and after the first login no longer found obstacles that inhibit this web-based learning. Flexibility here is when students encounter problems in the field, such as not being able to conduct discussions online, the discussion can be raised during face-to-face learning in class so that obstacles encountered in the field can be immediately identified and a solution sought. The Originality here is that the web is indeed made for e-learning and not for outside learning activities; also material created by students in groups can be used in the online learning process. And Elaboration here is that students can foster ideas that can then be displayed in a product that is making material or teaching material by integrating various elements such as sound, images, videos so that it becomes interesting digital content and can be used in e-learning.

Kiki (2017) explains students' achievement for the test of creative thinking ability of each indicator on good and lack of interpretation. The Fluency Indicator has been mastered by 80% of students who have been able to obtain a maximum score on this indicator so it is well understood. The Flexibility indicator is still being mastered less because only 23.3% of students have been able to get the maximum score on this indicator. The understanding in the Originality indicator still lacks because students who can answer with a maximum score are only 35%. In the Elaboration indicator, the percentage reached 63.3% so that is well grasped. Based on the table, the above shows the ability of creative thinking students is dominated by students who are in the medium category with a percentage of 63.3%, consisting of 19 students. In the high

category, only 8 students were represented at 26.7%. Furthermore, there were 3 students in the low category with a score of 10%. Based on the results of the study, the ability of students to think creatively is not fully owned by students, which is indicated by the results that show students from each indicator are still lacking understanding of indicators for flexibility and originality (authenticity).

The results of Jihad Turkey's research (2018) in King Abdullah II Featured School on a number of students who have high mental skills and abilities, showed an average of fluency skills for ordinary students namely (23.11) and gifted students (23.82), while the average skill flexibility is (10.63) for ordinary students, and (12.05) for gifted students. Average originality for gifted students is (5.8) and for ordinary students is (5.16). The level of creative thinking skills, in general, is (39.55) for ordinary students and (41.04) for gifted students. This result means that the level of creative thinking skills for students is close – the same at a broad level – and gifted students practise creative thinking skills (fluency, flexibility, originality) at the same "average" level of thinking, and are very convergent.

E-learning allows individuals to plan and direct their learning processes so that each student takes responsibility for learning according to their awareness (Yucel, 2006). According to Castle & McGuire (2010), e-learning can improve learning experiences because students can learn anywhere and in any conditions as long as they are connected to the Internet, without having to follow face-to-face learning.

As Wahono (2008) explained, e-learning as a main process generally involves three activities, namely content, packaging, and distribution. Content is material prepared by lecturers. The packaging is a course offered and distribution, which is a presentation to students that is done locally and globally with the help of information technology, for example, e-learning. Web-based learning is built through several principles that play a role in determining the success of this learning process at the implementation stage, including interaction, usability, and relevance (Munir, 2010).

1. Interaction in e-learning learning at <https://elearning-ambarsrilestari.web.id> is interpreted as communication between students and lecturers, where there is a discussion forum that has been provided for sharing matters related to learning that is not yet understood by students. However, in terms of web-based interaction, students still lack activeness using discussion forums because of several things, including limited Internet access, students' lack of interest in utilising web-based learning, and still prefer to face-to-face discussions in class and meeting with lecturers and friends.
2. Usability here that students accessing web-based learning constraints are often encountered when logging in using a username and password, after that to attend classes and use the menu such as taking an exam on this learning can be done alone.



3. The relevance here is learning material has been packaged in a digital content so students can see it anytime and participate in discussion of the material so that they will not be left behind in getting information.

So the main principle in the implementation of web-based learning is that there must be interaction or communication between participants and instructors in a learning environment that uses the same web-based learning. Then there must be usefulness, namely how the development of web-based learning creates a consistent and simple learning environment, so students do not experience difficulties in the learning process. And there must also be the relevance of any specific information to improve students' understanding and avoid bias.

Conclusion

Creativity can be developed in three aspects, namely personal, process, product, and press. E-learning learning is carried out through four stages: preparation, incubation, illumination, and verification. Teaching material that is packaged using informatics technology can provide motivation and increase the creativity of students in understanding the goals and objectives of each learning. In learning e-learning, that which must be mastered by students, is namely knowledge (create), attitude (practice), and skills (create).

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