

Learning Objects Innovation in Higher Education: Students' Perspective

Murti Kusuma Wirasti
Educational Technology
Universitas Negeri Jakarta, Jakarta,
Indonesia

Cecep Kustandi
Educational Technology
Universitas Negeri Jakarta, Jakarta,
Indonesia

Mulyadi
Educational Technology
Universitas Negeri Jakarta, Jakarta,
Indonesia

Abstract:- The development of Learning Object (LO) for online learning in higher education that has been done need to be optimized on its utilization. Based on the literature review, analyzing the needs on students' perspective as the end-users of the online course is necessary. The objective of this research is to obtain the innovation needs in improving the LO from students' perspective. The research was using the Kavita Gupta (2007) needs analysis model through knowledge and skill assessment approach. The phases include: initial data collecting, planning, analyzing the needs, analyzing data, and reporting. The data were collected by using questionnaire, Focus Group Discussion (FGD), product testing, and LO observation. The subject of the research was students that had taken the Teaching and Learning Theory course. Meanwhile the research object was the course-site of the course in www.fip.web-bali.net. The result of this research found that:

- LO that had been developed had too many texts, the students faced difficulties in studying theoretical courses without lecturer's guidance;
- The innovation on the teaching materials that had high cognitive was needed, such as adding visuals and real examples on the theory/concept/principle implementation; and
- The developed LO should be integrated with face-to-face learning.

Keywords:- Need Analysis, Learning Innovation, Learning Objects, Students' Perspective.

I. INTRODUCTION

Learning by using online technology requires learning materials that must be arranged systemically so that they can be used optimally. Many aspects need to be considered in preparing digital materials, such as compatibility, learning modality, types of knowledge that must be mastered, accessibility, or teaching strategies [1]; [2]; [3]. These digital materials should be broken down into smaller learning materials such as learning using digital assets [4], [4]; [5]; [6].

The development of many learning objects uses the perspective of the developer or the learning designer. Thus, it often ignores the perspective of students as the end users to achieve the competences/skills that they want to achieve. The results of previous studies which were related to the ability of the students to learn using digital assets required a learning conditions: independent learning. In addition, there

are also many cases in Indonesia where online learning is not optimally used; including at Jakarta State University. Researchers found that many developers skipped an important phase in developing the online learning, the need analysis. This analysis phase should be examined closely to see the perspective of the students as the end users.

Online learning itself has been implemented through various types of platforms, such as Moodle, Dokeos, Claroline, and Chamilo. However, the problem does not lie on the type of the platform, yet innovation is needed to overview the learners' aspect; students more optimally [7]; [8]. Thus, the purpose of this study is to answer the research question of how students interpret learning objects that have been used in online learning? What innovations do the learning object development team need to do so that the students could achieve their competences?

II. METHODOLOGY

This research uses needs analysis model proposed by Kavita Gupta, 2007 [9]. The model uses knowledge and skill assessment approach. The stages of the research are conducted by collecting initial data, planning, conducting need analysis, analyzing data, and presenting the reports. The data collection will be done by using questionnaires, focus group discussions, product testing, and learning object observation which has been developed previously. The respondents are the students of "Teori Belajar dan Pembelajaran" course and the research object is the course-site which has been used within the course, both by using Claroline and Chamilo. The research method is illustrated through the following graphic:



Fig 1

III. RESEARCH RESULT

A. Initial Data Collection

Students as the research subject were those who had enrolled to the course in the previous semester. The learning method used within the course was blended learning, with only 10% online course. However, the learning materials, including the slides were all uploaded at the course-site. Students could download the material and use it as a self-study material or the discussion material on the following face-to-face classroom. The type of learning object used were slides, text-based reading materials, and hyperlinks to other online resources. Nevertheless, printed text-book was still used. Later, the students would be given opportunity to perform face-to-face presentation in group of what they have read.

B. Planning

Planning is generated through a peer discussion process between researchers, material experts, and learning object development teams. The purpose of this research is obtaining the meaning of learning object utilization which had been done in the previous semester. Researchers believe that learning has not been optimal because students either did not or seldom use the developed learning object as the main learning resources. The results of this stage are need analysis planning which includes the learning process observation, interview, and focus group discussion to nine students. The result of the need analysis was the focused data which would be discussed further by the team to draw the learning object conclusion and recommendation on the Chamilo platform.

C. Needs Analysis Implementation

The data was obtained through observation when the students used existing learning objects. On each topic, students were asked to provide comments and hopes for innovation on the learning object and other expected learning objects' type. After observation, researchers conducted focused discussions on the nine students. The researchers also conducted in-depth interviews on the unique responds.

D. Needs Analysis Results

There are three findings categories at this stage regarding the students' opinion on the developed learning object; the type of learning object that is intact even though it is versatile and the clear instructions on each learning object.

- **The first finding**, obtained through student statements that participating on web-based for one semester was not interesting, as stated below:

➤ *"I feel less effective if learning activities are done completely online, it is inconvenient". Another stated, "learning theory is rather difficult if you only read it yourself. You need to give more examples".*

These statements expressed that culturally, online learning requires more efforts than face-to-face learning. Students have been used to the presence of the lecturers as the main sources in classroom setting. Basically, students had not yet felt the urge of online learning to achieve the expected competencies.

- Whereas on **the second finding**, students gave responses and suggestions for improvements to the existing learning objects. They assumed that the types of learning objects available on learning sites were text, presentations - power points, videos and pdf -, and links to other online learning resources. Students stated that learning object types still tend to be textual and they find it difficult to understand the material that is studied independently without the help of lecturers. Documents analysis on previous learning objects showed that the existing learning objects tend to contain written text, not visual text.

Following is the student's statement when was asked about his response to the learning object. David's statement, "the available material contains only paragraphs". The word 'paragraph' means that the learning object contains only words. Then he suggested an innovation, "the paragraphs material would be understood better when it comes in interesting video or PPT -power point- form". At the same time, Diana also stated, "full text only", and she hoped, "each material should have supporting illustration to strengthen the understanding of the material itself". The need for illustration was also mentioned by three other students,

- "each slide contains mostly text and lack of supporting illustrations"; "there are few slides that contain only texts without any illustration"; "the layout is dull and boring".

The answers to the above questions are relevant to the methods' option taken by students to find books/learning resources, in the following table:

Statement	Chosen Response	%
The most frequent way to access learning resources	never access learning resources	11.11
	only copy part of the book which assigned	22.22
	borrow from a library or a senior	55.56
	copy the entire book	00.00
	buy a book hardcopy / download the e-book which relevant with the topic	11.11

Table 1

The willingness to read complete knowledge has been reduced to the incomplete learning, yet in the form of learning fragments. There were no students who have complete learning resources. Conceptually, learning could be broken down into smaller parts just as the learning objects. However, it does not directly mean that the expected competences could be obtained through studying partial learning materials.

- **The third finding** is related to the instruction availability. The data mention that the students expected that online learning could occur such face-to-face learning. The students said, “the presented materials are unclear and lack of examples; there is also no clear instruction”, or “the teacher lectures in the classroom helps us understand the materials better”. The statements show that the students face difficulties in performing autonomous learning so that clear instructions are needed. Furthermore, students expected clear instruction on each developed learning object. Another finding, students asserted the learning object that helps illustrating the abstract theories and make it more concrete.

There is another related finding: the accessibility aspect, as stated by the following student:

- *"It is expected that the web could displayed perfectly on mobile phone so that it could be accessed anywhere and anytime without the necessity to carry laptop anywhere".*

The current technology trend is on the ease of utilization to support the high mobility.

IV. DISCUSSION

A. Learning Objects: Changing the Watch to Reading Culture

This study found that students, when were involved on the learning process, preferred visual learning objects and more examples. The reason why students preferred visual learning objects is relevant to the long process of the socio-cultural aspects. Culturally, the community still shows its main character as a speech society [10]. If the cultural perspective is used, the knowledge or action will be carried out in a patterned or repetitive manner where it becomes habit in period. Indonesian tends to chat, *hang out*, and listen which indicates the speech is still the main character.

It could be seen on how speech culture is still occurred in various aspects of life, either politic, economic, or social cultural. In political life, speech culture manifests in promises, speeches, political gossip, hate speech, and other verbal activities. Social appreciation is mostly based on those who have public speaking skill rather than the actual working culture. Politicians who deliver better speech would receive sympathy and public admiration faster so that their career quickly rise. Therefore, those who master the stage in giving speech would be assigned

to important position. In contrary, behind the scenes politicians, ideologists, and intellectuals, receives less recognition from society.

The speech culture is also reflected in the world of learning, as can be seen in the learning pattern which is still dominated by the lecturing method. It does not mean that this method is ineffective, for it is still the mainly used method by the teachers, lecturers, or instructors. Perhaps because of its practical, easiness, and inexpensive character, it is almost certain that the lecturing method still dominates the teaching method used on the classroom. Of course, there are also those who try to combine it with other methods and are equipped with various media, but it is a fact that the lecture method still occupies the longest duration in taking part in the learning process.

Perhaps, on one hand, it is driven by boredom because of the domination of the lecture method, so students prefer visual learning objects. On the other hand, it is indeed a logical consequence of the widespread culture of watching. The strong culture of watching is growing along with the increasing of visual information as the presence of new media.

Today we are in the midst of a new media revolution era. A shifting from the previous culture to the form of computer production, distribution, and consumption culture. This new media revolution is considered very deep compared to previous media (Manovich, 2002). The computer media revolution has had a wide impact on all levels of communication including the processes of procurement, manipulation, storage, and distribution. It is also has an impact on all types of media: text, still images, moving images, sound and spatial construction [11]; (Manovich, 2002). New media presents a convergence of two separate historical trajectories namely computation and media technologies. Various new media objects are the result of conversion from various previous media forms or what Bolter and Grusin (2000) call remediation. According to them, remediation is the “*mediation of mediation, a medium refashions its predecessors and also other contemporary media*” (Bolter and Grusin, 2000:17). The remediation process assumes a process of data merging or in other words, the original data continues.

As can be seen that in the last two decades, the presence of new media is so massive, extensive, and intensive in the communication pattern within our society. Likewise, in the world of learning, the presence of new media that continues to offer increasingly sophisticated application features make the learning process more closely adhered to the logic of the media. This is what is called the learning process experiencing meditation. Initially, educational institutions are resistant to the presence of new media because they are considered to tear the values of conventional learning based on face-to-face communication or social presence. However, over time educational institutions only take a selective stance before eventually receive a total offer of applications by new media, such as online learning.

So, the presence of new media in the education world is right when the culture of watching is still dominant. As an implication, the presence of media is fostering the culture of watching so that it presents many fundamental learning problems. One of the problems is the emergence of learning contradictions. On one hand, of the presence of new media requires reading culture, while on the other hand, its presence fosters the watching culture. This trap of contradiction in learning is what continues to surround the world of education in Indonesia in line with the presence of new media. Therefore, several phenomena, such as the perception development among students that exploring the internet world are watching, not reading.

Such perspective is a cultural matter. That is when students understand and respond that surfing the internet is watching. Thus, it is still conceptualized as watching, it is no wonder that then the biggest access of the internet among students is still recreational, not educational. The strong development of the watching culture makes students more intensively connected to the recreational world which is shown in the habit of their sharing or posting visual information. The high intensity exposes and is exposed by posting these visual images make students now prefer visual learning objects.

The problem is, that this visual learning object is only give more contributions to the achievement of competencies in the psychomotor domain. Meanwhile it is less contributing in the cognitive competence, even though cognitive realm is still more important to build intellectual capacity of the students. In higher education level, the outcome that is more highlighted is its analytical ability, not only the skills and affection characters. Therefore, the thesis that can be submitted for this finding is whether the declining ability of students to analyze is equal to the increased enjoyment of visual learning object.

The implication is acute. The watching culture is closely related to the low interest in reading. On one hand, the current digital era demands basic requirements, such as a high reading culture so that the use of the internet will be more productive for learning purposes. On the other hand, the digital media convergence widespread offers a variety of materials to watch. Meanwhile, the development of watching culture will be inversely proportional to the development of a reading culture. This contradictory situation is now putting the students in a trap that undermines the learning ethos.

B. Learning Instructions that Establish Student Autonomous Learning Ability

In social perspective, Society are formed by hierarchical and stratified social structure. On such non-egalitarian characteristic's communities also has vertical interaction patterns. The social roles are also hierarchical and stratified, as there are high, middle, and low social classes. The pattern of interaction is then becoming asymmetrical, in the sense that some are dominating, and others are dominated. Patterns of interaction and communication occur in various areas ranging from social

institutions such as family, education, and society in general.

In educational institutions, vertical patterns of interaction and communication take place continuously involving teachers or lecturers and students. The position of the teacher or lecturer in the vertical learning communication pattern is on the dominating party, meanwhile the students are subordinated. Thus, learning communication takes place one way, transmission, and drilling repeatedly. In other words, the learning process is instructive and even indoctrination. Students just accept and follow what is instructed by the teacher or lecturer.

The implications on such learning communication patterns makes students become passive and lack of initiative or passively involved in the process of searching and sharing knowledge. Their imagination becomes less developing. Therefore, learning simply fulfills the formalities of education; to just graduate and get a diploma. Such learning processes make students less motivated to seek knowledge, let alone engage in the process of sharing knowledge. The teacher is then positioned as the main source of knowledge, and students just wait and receive what the teacher says. The lack of encouragement to seek for knowledge among students has caused the learning process to be monotonous and formalistic. Students were then lazy and even afraid to ask questions.

The passivity of the students then caused an unpleasant learning atmosphere, monotonous, instructive, and routine so that learning is also an exciting challenge. Even the perception developed that learning is a burden, as mentioned by an informant that,

➤ *"The group's presentation assignment made me confused. I have to study the available material at the course site alone, then present it to my classmates on the face-to-face classroom".*

While the classmates who were being lectured said that they expected more an explanation from the teacher, not only from a group of classmates who had studied the material first. They claimed that they did not understand so that they think that they have not achieved their competence.

According to the informants, it is indicated that the learning process was not well-designed through the principles of learning technology. Teachers rarely prepare for interesting learning process, such as applying quantum learning methods, dialogue, role-playing drama, or other constructivist learning methods, that make students feel comfortable in learning. It lowers the learning endurance because students think that learning is a burden and boring, stuck in routine. Student's imagination does not develop. Thus, they consider learning simply fulfills formal obligations that less challenging.

Teachers also does not design learning that provides variation of knowledge, for example designing varied learning objects, including text, audio, visual, audiovisual, and examples. Although the informants from the teachers' side claimed that they had designed learning that contained various learning objects, it was not according to the students' perceptions. This is clearly an indicator that teachers are not used to doing need assessment or recognizing the characteristics of students. In other words, the teacher is still rarely performing characteristics analysis which is the basis on designing learning that offers varied learning objects from the students' point of view.

The monotonous, routine, instructive, and formalistic learning situation causes students prefer learning objects with examples. Students like when teacher deliver learning material with examples, as follows:

➤ “...When I read teaching material or join the class, I prefer teacher giving examples. The examples help me to understand the materials. I often face difficulties to understand a concept if the examples are not given. Those examples accelerate my understanding and help me to remember definitions or concepts”.

According to the confession of the informant indicates that students prefer to learn pragmatically. It means that students will choose the simplest and easiest way to learn a concept. It could be concluded that the willingness to understand, find, increase, and the curiosity of students towards teaching material is still low. The endurance and the imagination of students are not developed adequately. Those leads to the formation of imitation culture. The development of this imitative character is what then makes students prefer the learning object with more examples.

V. CONCLUSION

This study found that: (1) learning objects that have been developed used too much text that made students had difficulties in learning online, particularly on theoretical subject without sufficient direction of the lecturers; (2) innovation is needed in high cognitive learning materials, such as by adding visual components and providing sufficient examples on the theory/concept/principle application in real situation; and (3) the developed learning objects need to be integrated with face-to-face learning.

The innovation in learning objects should be the learning object that guides the students in changing the directed learning model to self-learning by emphasizing on strong visualization and providing clear instructions.

REFERENCES

- [1]. C. Barritt and F. L. Alderman Jr., “Creating a reusable learning objects strategy,” *John Wiley Sons*, p. 291, 2004.
- [2]. D. Gasevic, J. Jovanovic, and V. Devedzic, “Ontology-based annotation of learning object content,” *Interact. Learn. Environ.*, vol. 15, no. 1, pp. 1–26, 2007.
- [3]. P. T. Northrup, “Learning objects for instruction: Design and evaluation Information Science Publishing,” *Br. J. Educ. Technol.*, vol. 41, no. 6, pp. 968–978, 2010.
- [4]. E. Duval, S. Ternier, and F. Van Assche, *Learning Objects in Context*. 2008.
- [5]. D. E. Francis and E. Murphy, “Instructional designers’ conceptualisations of learning objects,” *Australas. J. Educ. Technol.*, vol. 24, no. 5, pp. 475–486, 2008.
- [6]. S. E. Metros*, “Visualizing knowledge in new educational environments: a course on learning objects,” *Open Learn. J. Open, Distance e-Learning*, vol. 20, no. 1, pp. 93–102, 2005.
- [7]. J. E. Agaba and J. T. Lubega, “Adaptation of Learning Objects with Multi-Format Assets,” *Int. J. Inf. Educ. Technol.*, vol. 6, no. 1, pp. 76–79, 2016.
- [8]. K. A. Preisman, “Teaching presence in online education: From the instructor’s point of view,” *J. Asynchronous Learn. Netw.*, vol. 18, no. 3, pp. 1–16, 2014.
- [9]. C. Guerra, A. Moreira, and R. Vieira, “Technological pedagogical content knowledge development: Integrating technology with a research teaching perspective,” *Digit. Educ. Rev.*, no. 32, pp. 85–96, 2017.
- [10]. M. Qi and T. Boyle, “Dimensions of Culturally Sensitive Factors in the Design and Development of Learning Objects 1 Introduction 2 Dimensions for Culturally Sensitive Factors in the Design and Development of Learning Objects 3 The Knowledge Dimension of Learning Objects 3 . 1,” *J. Interact. Media Educ.*, vol. 2010, no. 1, pp. 1–17, 2010.
- [11]. G. Fischer and E. Scharff, “Learning Technologies in Support of Self-Directed Learning Keywords : Commentaries ;,” *J. Interact. Media Educ.*, vol. 98, no. 4, pp. 1–32, 1998.