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The Use of Digital Toolbox in Management Project e-Learning to Boost College Students Creativity Skill

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Abstract: This study aimed at investigating the use of educational digital toolbox in e-learning to boost college students' creativity skills, such as making connections, asking questions, making observations, networking, experimenting in their learning projects using graphics, images, and charts, audio, audio-visual and video, opinion or evaluation. It particularly focuses on the importance of the use of digital toolbox in e-learning for students of architecture major. The study conducted the qualitative method. The instrument used was a questionnaire which were prepared for the purpose and which was administered to 55 students at Indraprasta university, majoring in architecture department in South Jakarta, during June and July 2021. The result of this study shows most of students boost their creativity skills by using educational digital toolbox in e-learning process. The new insight that architecture students can be creative to use long distance learning more active and more interactive, as well as enhance their learning experiences. Moreover, using creative pedagogical implementations such as effective digital toolboxes, challenging projects and students' feedback can boost students' creativity skills with the innovative learning trend.

Key Words: Digital Toolbox; Management Project; E-Learning; Creativity

Abstrak: Penelitian ini bertujuan untuk menyelidiki penggunaan kotak peralatan digital pendidikan dalam e-learning untuk meningkatkan keterampilan kreativitas mahasiswa, seperti membuat koneksi, mengajukan pertanyaan, melakukan pengamatan, jaringan, bereksperimen dalam proyek pembelajaran mereka menggunakan grafik, gambar, dan grafik, audio, audio-visual dan video, opini atau evaluasi. Secara khusus fokus pada pentingnya penggunaan toolbox digital dalam e-learning bagi mahasiswa jurusan arsitektur. Penelitian dilakukan dengan metode kualitatif. Instrumen yang digunakan adalah angket yang diberikan kepada 55 mahasiswa Universitas Indraprasta jurusan arsitektur selama bulan Juni dan Juli 2021. Hasil penelitian ini menunjukkan sebagian besar mahasiswa meningkatkan kemampuan kreativitasnya. dengan menggunakan toolbox digital pendidikan dalam proses e-learning. Wawasan baru bahwa mahasiswa arsitektur dapat berkreasi menggunakan pembelajaran jarak jauh lebih aktif dan lebih interaktif, serta meningkatkan pengalaman belajar mereka. Selain itu, menggunakan implementasi pedagogis kreatif seperti kotak peralatan digital yang efektif, proyek yang menantang, dan umpan balik siswa dapat meningkatkan keterampilan kreativitas siswa dengan tren pembelajaran yang inovatif.

Kata Kunci: Digital Toolbox; Manajemen Tugas; E-Learning; Kreativitas

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INTRODUCTION

During these uncertain times of the COVID-19 pandemic, various schools and colleges around the globe, including those in our college, have imposed a "study from home" (SFH) policy for their students, teachers, lectures and college-students. The SFH policies, which applied for an extended period of time, will affect lecturers and students' teaching and learning habits very differently. Lecturers as professional initiate to provide online learning as an alternative to stay productive and maintain the learning process to still continue. Besides, the policy, to study from home might be more challenging for being creative professional lecturers who can create more effective learning strategies or methods, as well as provide creative and educational digital media for their students.

The 21st century confronts its citizenship with new choices, opportunities and challenges due to the all-pervading technology into all spheres of life. In this era, the educational institutions cannot remain mere venues for the transmission of a prescribed set of information from teacher to student over a fixed period of time rather the educational institutions must promote "learning to learn" i.e. the acquisition of knowledge and skills that make possible continuous learning over the lifetime. So it becomes the responsibility of the teachers to shape up accordingly to meet the demands of the day (Chhabra, 2012).

The current e-learning way which emphasis on students' ability and creativity to engage in complex thinking and problem solving tasks. Among the shortcomings of conventional learning identified is design the learning process which do not measure how well students apply what they know to new situations. Nor do the designs allow the learning of how students might use digital media to solve problems or communicate ideas. In addition, the conventional learning way does not help teachers make informed decisions on how modify their learning instructions creatively. Teachers are facilitators assisting students to obtain knowledge from relevant and innovative ways one of them is how they use digital toolbox in e-learning.

E-learning is an implementation of electronic media for a variety of learning purposes to facilitate the delivery of distance education, online learning or blended learning. There are many terminologies regarding the e-learning which includes distance education, blended learning, hybrid learning, online learning etc. J.J.Roberts (Kassymova, 2020).

According tp Zhao (Henriksen et al., 2016) the rapid pace of new technology development has presented a challenge for classroom technology integration. Creativity is deeply connected to issues of technology integration, so these issues of creativity and technology can be considered in tandem. With the current and rapid rate of development in technology, creative industry, information and demography, the new style learning must be applied creatively and innovatively. The changing landscape has changed students' mindset and skills all at once. There is a shift from merely gaining knowledge to scouring for information using the latest technology. Therefore, students need to master several skills to thrive in this dynamic world of work; the same skills which are communication, collaboration, critical thinking and creativity that will enable them to become productive students in this 21st century.

The demands of today's world require various method of learning such as problem based learning, research and development, and project based learning to use digital toolboxes as learning media in e-learning. Therefore, the use of creative educational digital media can enhanced multimedia instruction allowed teachers to tailor instruction to diverse student needs and styles and provided opportunities to boost student creativity skills. Besides, students are different in their abilities and their creativity varies from person to person.

The technology offered is speed and unlimited place and time to access information (Sudarsana et al., 2019). Teaching and learning activities can be done easily by students anytime and anywhere. The boundaries of space, distance and time are no longer complex problems to

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solve. The way to learn through the web is that there is access to information sources via the internet.

Another important factor to consider in online learning is the students' learning styles. Students may need frequent interaction with their lecturers and other students, or they may have collaboration in learning processes. Furthermore, modern technology like video, smart phone, internet and various applications or social media platforms are now considered essential for communication, learning media, social networking, partnership, entertainment and managing daily life. Those are categorized as digital toolboxes that help students to enhance their learning styles and learning skills as well. Therefore, the use of digital box in e-learning is also producing visual-spatial skills such as iconic representation and spatial visualization that boost their creativity. However, students practice creativity skills which are valuable workplace skills because it can be a useful skill for developing new ideas, increasing efficiency and devising solutions to complex problems through engaging widely in problem and project based learning within their lesson of management project in Architecture by using digital toolbox.

METHOD

The study attempted the qualitative method by using observations in learning process, instruments, and documents (teaching material and their projects of management project subject using digital toolboxes). The instrument used was a questionnaire which were prepared for the purpose and which was administered to 55 students, (25 females and 30 males) at Indraprasta university, majoring in Architecture education department in South Jakarta, during June and July 2021.

Participants

Participants in this study were students majoring in architecture at Indraprasta University PGRI as many as 55 students (25 females and 30 males). The students were studying in the same management project course but were at two different classes. They were first-year students in second term in 2021/2022.

Sampling Procedures

The instrument used was a questionnaire which were prepared for the purpose and which was administered to 55 students. The questionnaires were composed of twenty questions about creativity in management project tasks and the use of digital toolbox in e-learning process. Questionnaires seem to be very common among educational researchers in general and architecture researchers in particular. Another feature of qualitative research is that the data can be analyzed using an open ended approach (Sharma, 2010). Generally, there are two types of questions in questionnaires: closed-questions and open-ended questions. We prefer to choose open-ended questions that suggested by Foddy (Benediktsson et al., 1992) that open-ended questions allow the respondents to say freely what is on their minds without being influenced by the researchers. In such an open ended approach the data can be analyzed with respect to the research questions and the theories posed by the researcher as well as theories of what is occurring that can come out of the data itself

Procedures

The purpose of the current study is to analyze the use of educational digital toolbox in e-learning to boost students' creativity skills. Multimedia approach is used to describe and

analyze the students' creativity skills by using digital toolbox in e-learning process. Two classes were assigned as the participant of the study. The research includes two variables; the first variable is a digital toolbox. The second variable is students' creativity skills. Both classes were taught management project in Architecture lessons via e-learning by using digital toolbox. The survey lasted for five weeks. To achieve the aims of the study, the researchers used questionnaires aimed at measuring the degree of importance of students' creativity skills for first-year college students 2021/2022 were prepared by Management Project Syllabus as and digital toolbox in e-learning as questionnaires. Lecturers designed and shared the link of the questionnaires to the students to fill via Google drive.

Design or Data Analysis

The study attempted the qualitative method by using observations in learning process, instruments, and documents (teaching material and their projects of management project subject using digital toolboxes).

RESULT

The respondents consisted of 30 male students and 25 female students. The results of the questionnaires that applying the use of toolbox in e-learning and boost student's creativity skills in management project lesson are shown in the graphics and a table below. These data were also used to clarify and present with analysis and interpretation.

Table 1. The Result of Students Responses to e-learning in Management Project Couse:

Question items	Agree		Disagree	
	Total person	Percentage (%)	Total Person	Percentage (%)
1	46	83,6	9	16,4
2	44	80,0	11	20,0
3	43	78,2	12	21,8
4	40	72,7	15	27,3
5	41	74,5	14	25,5
6	43	78,2	12	21,8
7	38	69,1	17	30,9
8	35	63,6	20	36,4
9	30	54,5	25	45,5
10	28	50,9	27	49,1

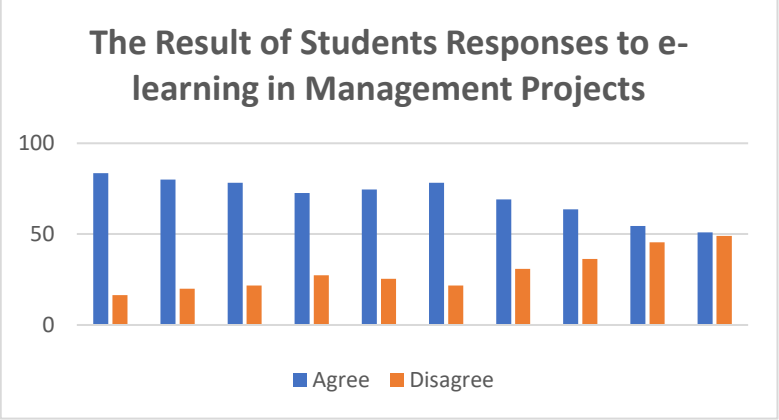

Figure 1 The Result of Students of Responses to e-learning in Management Projects

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Based on the results of 55 respondents can be seen student responses to each question item: (1) Students as much as 83,6% agree with distance learning (e-learning) which is held at the moment in the midst of the pandemic Covid-19, which requires students to learn at home. Furthermore, number (2) As many as 16.4% of students said they did not agree that distance learning (e-learning) made it easy for students to interact with lecturers; (3) Interaction with lecturers is more familiar expressed by students with a percentage of 80.0%; (4) Expressing the problems faced in lectures to the students is more convenient through online using digital tool boxes rather than face to face. The statement was responded by 72.7% of students who agreed and 27.3% who disagreed; (5) Students feel comfortable to answer the questions and do the class projects given in online lectures. The statement responded by 74.5% of students agreed; (6) Students prefer the learning environment to online lectures rather than face to face. The statement was responded by 78.2% of students agreed otherwise there was 21.8 responded disagree; (7) Challenges faced by the students in online learning more than offline lectures through a wide range of research assignments and projects. The statement was responded by 69.1% enthusiastically, but doubtful and disagree students 30.9%; (8) Overall, online learning makes lecturers give more projects than offline learning. The statement was responded by 36.4% of students who disagreed, even though, there was almost students well-responded as 63.6%; (9) Online learning makes students better understand the material. This statement was responded by 45.5% of students hesitated; (10) Students become more active and independent because of e-learning. This statement was responded to by students as many as 50.9% agreed.

According to the findings, students believe that the use of digital toolbox (WAG, PPT, Google classroom, Zoom, Teams, etc.) in e-learning motivate and stimulate them to be creative in doing management projects. A large percentage (94%) was of the opinion that digital toolbox in e-learning increase their creativity skills in doing creative projects, such as: project based learning, brainstorming, the project manager and virtual projects meeting. (question 1). Again a high percentage of the students (90%) indicated that digital toolbox should be used in management project course (question 2). Answering question 87% of the students believe that authentic and interesting materials downloaded from the internet and used by the students make the project management in e-learning process more creative. In question 4 most of the students (85%) reported e-learning teaching activities make the lesson more enjoyable. They agree that digital toolbox in e-learning never makes the lessons boring or unimportant. The result of question 5 showed that 91% of the students agreed that digital toolbox should always be used in management project course to increase their creativity skills. They wanted to see different technological devices used as innovative tools. The 100% students agreed that the management project course seem more interesting and enjoyable when they use digital toolbox in e-learning process (question 6). In addition, 89% of the students agreed that tutorial using digital toolbox can boost to develop their creativity skills in question 7. Looking at question 8, the students agreed that the fact of using digital toolbox every time e-learning process makes them interested in doing the virtual projects. Eighty-two percent of the students reported in question 9 that they think project work should be presented through digital toolbox in e-learning process. Surprisingly, the 7.3% of students' response disagreed in question 10 that e-learning-based courses are more effective than traditional ones.

Table 1. The Result of Students Responses to e-learning

Question items	Agree		Disagree	
	Total person	Percentage (%)	Total Person	Percentage (%)
1	52	94	3	5
2	50	90	5	9
3	48	87	7	13
4	47	85	8	27
5	50	91	5	9
6	55	100	0	0
7	49	89	6	11
8	46	84	9	16
9	45	82	10	18
10	51	93	4	7

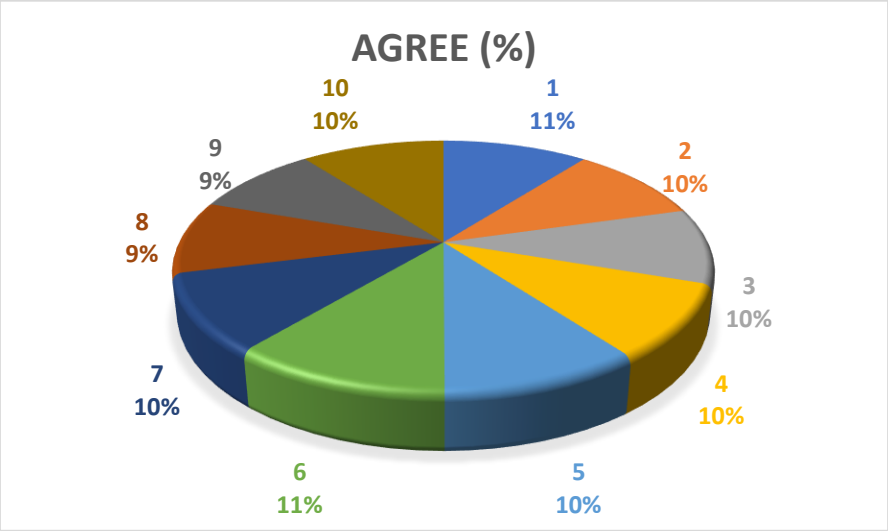

Figure 2 Percentage Agree

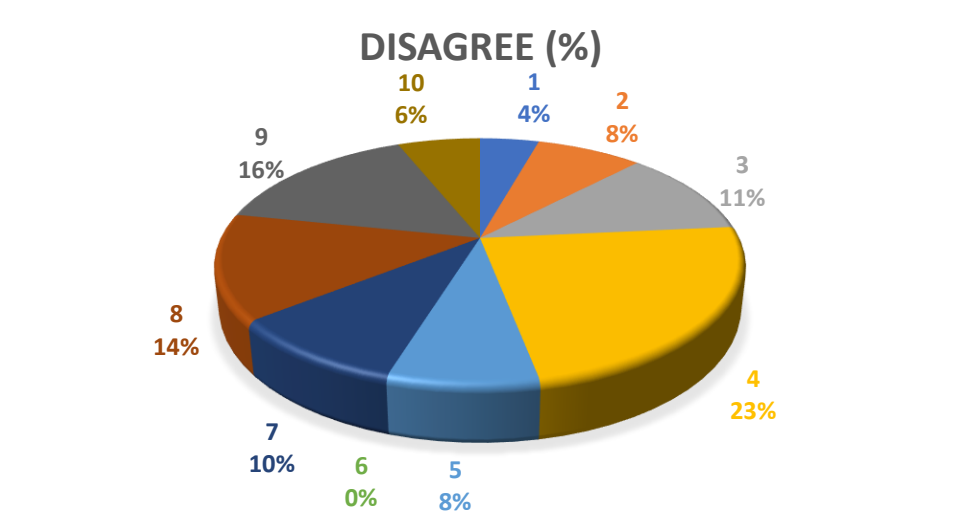

Figure 3 Percentage Disagree

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DISSCUSSION

All through the process of observing and instructing learning management project strategies using digital toolboxes in e-learning, we have found that three main aspects related to the impact of using digital toolbox to boost students' creativity skills in e-learning. These aspects were; (1) students' creativity skills were reflected on projects using the toolboxes. During the learning process in e-learning, we noticed that the majority of the students enjoy using digital toolboxes in management project and would like to develop their capacities for imagination, creativity and collaboration for maintaining competitive advantages. The interesting responses to the study though, are that the students clearly explore and creative that there were some benefits to use the digital toolboxes in e-learning management project course. The previous responded stated by Mutambik, 2018 that a significant component of this technology advancement is the development of the e-learning environment which has been recognized as having transformative potential in terms of teaching and learning methodology. Specifically, students can use e-learning resources to acquire their creativity skills.

Next, (2) the second aspect was the role of teacher to engage students into the use of digital toolboxes in reading e-learning process. Students today are already knowledgeable with gadget and digital devices, and these give them the confidence to believe in their ability to accomplish learning projects that involve its use. They enjoy making presentations in e-learning using creative apps such as Powtoon, Power Point interactive and other presentation software and using videos downloaded from the internet. In our study, we found that the students were excited about having opportunity to stimulate their skills and viewed the projects as challenging and engaging. In line with the results of previous studies that the application of contemporary digital technologies allows attaining the following results in the education process: (1) Interactivity; (2) Quality of education; (3) Motivation; (4) Possibility of self-dependent work; (5) Improving of communicative competency; (6) Self-evaluation of the achieved level (Nedeva & Dimova, 2010).

Then, (3) the third aspect was the importance of motivation when using digital tool-boxes in management project e-learning process. Therefore, by changing teaching methods and incorporating the use of digital toolbox in e-learning such as creative Power Point presentations, tutorial videos, and audio files to present the courses and its content, we believe students can be boosted their creativity skills in management project or other courses. This is in line with previous research which said that using tool opens doors to interact with the world. Management project creates the opportunity to learn and therefore learners should be offered the opportunity to improve their creativity skills. Moreover, the researchers attribute this finding to involving students in technological environment such as in e-learning process which enables them to feel more relaxed, interactive, creative, and interested to use varied digital toolboxes to enrich their learning experiences. Pehlivanova (Dineva et al., 2019) explained that "E-learning environment providing rich opportunities for using multimedia, which allows for a greater degree of acquiring knowledge. Visibility and interactivity of the multimedia attract and hold the interest of students. During the implementation of the digital toolboxes in e-learning process, the role of the lecturers were obstacles, as we had both students and lecturers were uncommon with using digital toolboxes and e-learning, moving from simpler activities toward more complex activities during two weeks. It was tough for us to get familiar with the use of digital things. Besides, the lack of devices, connectivity and learning experiences were the categories of the limitation. The geographical location of the living itself, the wi-fi access and learning experiences of using digital learning process showed in our study.

Finally, the affordances of the mobile devices owned by the learners were clarified in the study. Device considerations to use digital tool-boxes are also important for the learning and study design. Using digital toolboxes in management project e-learning to boost their

creativity skills were capable such as taking photos, or recording audio and video when doing their projects using all creative toolboxes provided.

Aside from the obstacles referring to the use of digital devices and learning experiences above, the students were creative as the results of using digital toolboxes. They even could apply some apps in their project tasks process by the end of the process they showed improvements in their creativity skills by getting creative and good management project performances. This suggests that if teachers make students aware of the learning process strategies and methods, the students would be more creative in their learning process since they could boost their creativity, their learning tools to learn, and their academic potentials as well.

CONCLUSION

The ability to use digital technologies is also commonly seen as a core skill in twenty-first century. Indeed, it is often argued that the connection between technology and creativity is a key issue for twenty-first century education (Henriksen et al., 2018).

The students recognize the relationship between creativity in Management Project course and the use of digital toolbox. The results of our studies lead us to make some different perspectives that (1) educational digital toolboxes should be an integral part of the Management Project course, particularly in doing their projects; (2) Students of Architecture can be encouraged to have e-learning as a way of making their learning more creative and innovative; (3) The technological media or support available will determine various implementation strategies to boost students in developing their creativity skills.

Digital toolbox in e-learning offers many benefits for the enhancement of students' reading motivation and this study has demonstrated that using it in the reading lesson as e-learning can be highly motivating for the students (Anggraeni & Pentury, 2020). However, the fact that the students who did not agree with the question reflects the fact that digital toolbox in e-learning wasn't used well in the Management project course and suggest that the way digital toolbox in e-learning should be reviewed. Moreover, they agreed that they still need their real teacher not digital tutorial. Teachers should be made aware of the importance of using digital toolboxes contain creative authentic materials and variety of methods. A creative teaching-learning process should be supported by the use of digital toolboxes in a way that supply students with added interest in the content and process of learning.

Beside, in our learning practice of using digital tool-box such as Whatsapps, power point and other tools to present lectures to these students in research methods, we have found it to be a method that the students like and which enables to understand the projects presented without difficulty. Using digital toolbox in e-learning makes the course interesting because they find visual aids are helpful for learning. As an example, when studying research methods, students who do not know what is meant by 'research projects formatting' can gain a much better understanding through the use of tutorial videos which actually show them how to format a research reading paper and how to select the margin, etc. Creating visual explanations had greater benefits than those accruing from creating verbal ones. Surely some of the effectiveness of visual explanations is because they represent and communicate more directly than language (Bobek & Tversky, 2016). When e-learning is employed, the students tend to do the virtual projects regularly because the courses look interesting and sophisticated. This is in mark contrast to the trend towards poor attendance which characterizes traditional classroom environment, where these are perceived to be boring and the students lack the necessary skills to achieve. So, using digital toolboxes in e-learning can boost the students' creativity skills to actualize their academic potential in Management Project course.

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