Digital Learning Process: Challenges for Specific Creativity

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Abstract: Digital culture has penetrated most aspects of our lives. Yet it has also dragged us into paradoxical situations and profound uncertainty. This, in turn, requires digital learning process that is capable of fostering mature individuals characterized by specific creativity; the kind of creativity rooted in prudence, deep insight into life as well as broad and integrated personal vision of the world. This research aims to see the extent to which digital learning process is conducive to the fostering of this type of creativity. This is an exploratory research with qualitative approach, conducted by means of questionnaires, in-depth interview and focus group discussion. Gen-Y and Z students from 13 Universities in West Java, Indonesia, were chosen for observation and interview, continued with focus group discussion in two courses which are Critical Reading and Cultural Entrepreneurship classes. The result shows that the practice of online learning so far contains some inherent constraints to meet the need. Some basic constraints pertain to the condition of the students themselves. Despite the flaws, however, online learning process also has some good potentials in fostering the required creativity, provided it incorporates 'engagement experience' and some strategies to 'go beyond data' in accordance with the students' suggestions themselves.

Keywords: digital learning process, uncertainty, creativity, engagement-experience, beyond-data

1. Introduction

Digital technology is indispensable today, for better or for worse. Due to the technology, life is made easier, opportunities for creativity are widely opened, the world is made transparent, information are available at hand, interconnection knows no boundaries, etc. Yet, the abundant information, the unlimited possibilities, and the speed of the development of the technology are such that now we cannot but live in greater and greater uncertainty. Harari is right when he said that in this context, uncertainty is not a 'damage', but rather, the very 'character' of today's civilization (Harari, 2019). Skills that we are proud of, beliefs that makes us feel secure, habits and principles that have shaped our lives, all become volatile and are soon replaced by the new ones. As we move on, things get more and more unpredictable.

Digital culture is indeed paradoxical in character. While it truly empowers individuals by giving them access to higher knowledge and insight, in reality it has also resulted in narrow-mindedness and complacency with one-sided information. While it connects people from all over the world, it also divides them into unnecessary opposing parties. While the flow of information is flooding and unstoppable, (young) people don't seem to know what to do with it. They know a bit of everything fragmentarily, yet incapable of connecting them into an integrated personal vision and insight. The thing is, to be a mature human being, one is not supposed to live simply with data, but rather, with value, meaning and personal vision. This is even more imperative today, in an age characterized by uncertainty and paradox, where one cannot rely on external systems any longer. The situation, in turn, requires a particular kind of creativity; not simply technical or intellectual creativity, but rather, creativity that is rooted in prudence, deep insight into life, as well as broad and integrated personal vision of the world.

As a matter of fact, due to the pandemic situation, digital process of learning has been spurred by default, regardless of whether or not we are ready for it; and therefore we are compelled to focus on the technical procedures in the first place. The ethos at work is then, by and large, pragmatic, to the point that we can easily get oblivious to the main goal and to the necessary outcome we expect regarding the future challenges. All this fact has driven us to make a research on what elements are necessary to foster the profound creativity as mentioned above.

With regard to this, at the outset there are three main questions that the research seeks to answer, namely: (i) what are the upside and the downside of the digital learning process in shaping the passion to dig deeper and

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to explore ? (ii) What are the better ways to sharpen critical mind in reading information?, and (iii) What factors are necessary to boost student's sensitivity and creativity in solving socio-cultural problems?

2. Literature Review

Many researches about the impact of digital culture on process of learning have been conducted. The following is a review on some of them which is then ended with what is specific of our own research.

2.1 Digital Culture, Problems, and Learning Transformation

The disruption of Covid-19 has spurred the transformation of the process of learning into digital modes even more. A lot of researches have been conducted on various aspect connected to the transformation. While some research focus on the advantages and the disadvantages of the digital learning processes, controversies seem inevitable as to the parameters used in measuring or mitigating learning losses(Decuypere, Grimaldi and Landri, 2021; Komljenovic, 2021). The concept of "well-being", for example, is now becoming increasingly difficult to measure because millennials live in a postmodern vision where "change" is a constant feature. Cultural instability and the phenomenon of social upheaval encourage individuals to challenge existing forms of orthodoxy and create something innovative, unexpected, surprising, and even paradigm-breaking (Roberts and Gardner, 2019). Some people believe that there is no single measure of how digital transformation is adopted in education and society, for the socio-cultural contexts of the digital application in many places are different. From this follows that what is needed is just the underpinning of the digital learning process in terms of key values and principles that are vital conditions for shaping a meaningful and people-centered future (Jensen, 2019).

Several researches highlight the advantages and disadvantages of the learning process in this digital culture and associated with the position of students as subjects(Al Rawashdeh et al. 2021). This is related to the issue of how to maintain the position of students as "subjects". The mechanism of digital learning processes now has been massively constructed by digital protocols and algorithms. Disadvantage applies also to economy, especially when it is related to the possible post-pandemic condition (Williamson, Macgilchrist and Potter, 2021). OECD and World Bank (2020), have published studies that quantify and simulate the economic impact of the losses due to the digital learning. School and campus closures result in weaker labor capacity and would cause an overall shortage of human capital(Azevedo et al. 2020; Hanushek and Woessmann, 2020). Other research results show the challenges faced regarding what teachers must prepare to accommodate new challenges and needs in designing the learning process. There are also the lack ability of teachers to use digital technology, in line with the intensity of communication between students and teachers that is decreasing as well as the monitoring process during the e-learning(Coman et al., 2020). The challenge is then, what kind of digital-literacy model can safeguard the position of individuals and groups as living subjects?(Lithgow, 2021). The thing is, the algorithmic mechanism of the digital devices in fact has somehow made patterns of thinking and behavior tend to be reactive, shallow, emotional, and less reflective(Sugiharto, 2020). Online learning process also open wider opportunities related to academic dishonesty. Adzima (2020) finds the relationship between individual factors and academic dishonesty in the online environment in terms of age and GPA variables. Other problematic issue concerns anonymity. Anonymity can be a challenge for teachers but an opportunity for students. Online learning reduces monitoring process to a very limited virtual appearance, and this can prevent truthful personal relationships between students and teachers(Alessio et al., 2017).

2.2 Creativity and Designing Ideal-Format for Learning

Despite the gloomy picture of digital culture in learning process, many research also see the advantage of it. The world of education today responds to digital culture which is characterized by uncertainty and rapid change with "creativity". There is a close relationship between creativity and the personality of students. Abedini (2020) assumed that the creativity level of the students in the virtual course was higher than the students in the ordinary/conventional class. E-learning and virtual courses can support creative thinking. Facilitating students to help them think creatively is one of the key goals in higher education. Those who possess the motivation and skills to use technological resources turned out to be more creative, competitive, adaptable, and employable on the job markets(Pavón Rabasco et al., 2015). Esjholm also found the same thing, that students with technological knowledge prove to be more innovative and creative(Esjeholm, 2012). Besides, digital technology requires humans to expand the perception and the ability of the senses --sight and hearing. The expansion of human cognition, in turn, would improve the way they create models of mentality in terms of space and time (Rodrigues de Souza et al. 2017).

Several studies also highlight the issue of the gap between generations which also affects how the design and format are suitable in teaching and learning process in digital era dominated by generation Y and Z. Gen-Y and Z are the most prominent generation in the use of digital devices. Higher education institutions are currently dominated by both generations. Generation Z is, for sure, more updated with smartphones and digital technology than generation Y (Kleinhans, Van Ham and Evans-Cowley, 2015; Rickes, 2016; Seemiller, C. and Grace, 2019; Shatto and Erwin, 2017). Gen-Z is a generation that has a unique character that defines them as a "smart generation" when using digital technology, while the teachers are "digital immigrants". In order to meet the needs of this new generation, teachers or educators must review the new basic components which are learner capabilities, preferences, experiences, frames of reference and familiarity with technology. This means that educators are to rethink and redesign their educational formats accordingly(Hashim, 2018). The fact is, most of the student's attitudes and behavioral tendencies today tend not to match the expectations of the faculty and the teachers. However, in the study of teacher's teaching effectiveness and student's responsiveness, several significant variables have been found, namely: student involvement, teacher credibility, and the interaction between teachers and students. These variables are considered crucial in the harmonization of learning processes. Frequent interactions with students, assistance in the form of personal challenges from the teacher, to be fair in classroom, listening to students and and encouraging them, to be generous in smiling, have been linked to the important role of a teacher in the learning process (Cooper and Miness, 2014; Finn et al., 2009; Goldman and Martin, 2016; Tosolt, 2010). There are also several studies that try to consider the suitable and combination model between e-learning and face-to-face learning as an answer to the gap between generation.

Given all the problems and the characters of digital culture, some research have also come up with certain suggestions. A research in Ghana shows that e-learning is considered an innovative idea and must be encouraged. However it is also realized that hybrid learning, which is a combination of online learning and face-to-face learning, is preferred(Mamattah, 2016). Another study by Underdahl, et.al. find that all campus-wide services and programs should be designed with students in mind, should take advantage of the latest technology, and should be built on a collaborative platform, not competition. Whereas a study that focuses on teaching found that the best teaching approach is mixed methods, a student-centered approach but collaborative with instructors(Cabral and Huet, 2011; Mary and Jebaseelan, 2014). Others remind us that sophisticated forms of teaching are needed to develop student competencies such as deep mastery of challenging content, critical thinking, complex problem-solving, effective communication and collaboration, and self-direction. In turn, effective professional development is needed to help teachers learn and refine the pedagogies(Darling-Hammond, Myler and Gardner, 2017). The study of applying CoI instructional design principles and the associated questionnaire, have investigated student perceptions of learning via an online course. The study found that student perceptions can be improved based on validated e-learning model and by learning in the community(Krzyszkowska and Mavrommati, 2020). Whereas Berrocoso et al. emphasize that e-learning process should do justice to three main nodes: (a) online students; (b) online teachers; and (c) curriculum-interactive learning environments. In this regard, Community of Inquiry and the Technological Acceptance Model are the most relevant(Valverde-Berrocoso et al, 2020).

The above review shows that, while the issues of creativity and the position of students as subjects have been discussed, the interconnection between the two has not been elaborated sufficiently especially with regard to the position of student in the rapid change and uncertainty caused by digital culture. We believe that in the digital culture creativity is not simply a technical issue, a matter of different generations, particular traits of individuals, or mere problem of method, but rather, it has to be based on prudence, deep insight into life, and one's integrated vision of the world. There is always the risk of getting lost or disoriented in the wilderness of digital information if creativity is not rooted in such qualities. In short, our research seeks to elicit deeper layers behind the problem of creativity. To be more specific, we try to find out what elements are to be incorporated in the digital process of learning today to foster such creativity.

3. Research Methods

This research is an exploratory research with a qualitative approach as described by Creswelland Creswell(2017). Creswell explains that research methods are research plans and procedures that include steps ranging from assumptions to detailed methods of data collection, analysis and interpretation.

Several stages of research process include: (i) *Codes*, a process to identify *keywords* and *key points* from interview results, (ii) C*oncepts,* which is to collect similar codes (*key points*) from interview results to be inputted in the group, (iii) *Categories*, a process to give meaning and broaden the concepts into similar groups to be used as foundation for the theory, and (iv) *Theory*, which comprises of collection of concepts and categories that were decoded and interpreted. The four phases are described in Figure 1.

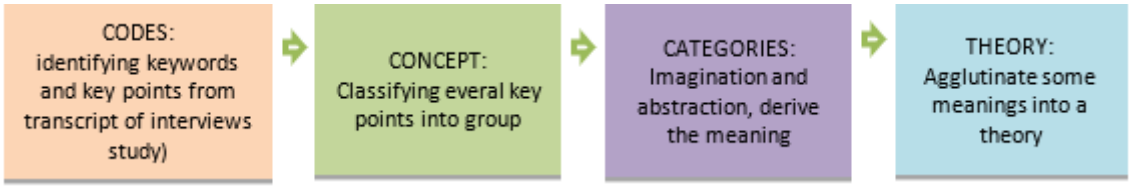

Figure 1. Research Stages

The data of this research had been collected from the result of questionnaires, followed by interview with 55 respondents from several universities. The transcripts of interviews were then coded, conceptualized, categorized and interpreted through focus group discussions and further data-analysis. The result, however, was not so much a 'theory' in the strict sense of the word as simply modest findings or preliminary ideas that can still be elaborated further.

At the first stage, questionnaires were distributed to 359 students from 13 universities in West Java, Indonesia. West Java was chosen due to it has the highest number of universities in Indonesia. The questions were: (i) Is information technology needed for learning process? (ii) Does online teaching method motivate you to dig deeper and to study better ? (iii) How do you find answers or solutions to the assignments given to you? (iv)What type of learning method do you prefer? (v) What are the benefits of using digital gadgets in the learning process ? (vi) What are the disadvantage of digital learning process ? The questionnaires were meant to get some preliminary findings. This was then followed by in-depth interview with 55 students regarding how the digital learning process impact them in completing their studies or in achieving their own personal goals. The second stage is conducted by means of focus group discussions in two courses, namely Critical Reading and Cultural Entrepreneurship classes in order to focus more on the problem of creativity.

4. Results and Discussion

In the first stage, the results from the questionnaires are as follows. Concerning the first question (Q1) whether information technology is needed for learning process, the answer is mostly "yes" (85%), although certain subjects needs more than others. But to the second question (Q2) whether online teaching methods motivate them to dig deeper and to study better, the answer was mostly "not that much" (69,6%), especially for subjects which need direct practice in field or lab. This may be related to the third question (Q3) as to how they find answers or solutions to the assignments given to them, whose answer was by and large, through reading books. As about the fourth question (Q4) on what type of learning methods they prefer, the answers were: a) those with lots of pictures, videos, and references; b) those giving freedom to explore, especially in team-works, with guidance and direct response from the lecturer; c) once in a while without PowerPoint is considered preferable. When asked about the benefits of using digital gadget in learning process (Q5), the answers were: a) it gives various unexpected information, with clear examples; b) it makes them feel more alive; c) it gives more freedom to explore and to manage their time. To the question about the disadvantages (Q6), the answers were: a) lesser interaction between students and lecturers; b) too many assignments with tight schedule of submission, hence lesser reflexivity and creativity; c) rigid regulations.

The questionnaire was followed by in-depth interview with 55 students. To the open question whether e-learning makes the learning process more effective in meeting their needs, the answer was split into "yes" and "no", fifty-fifty. Those answering 'yes' were because:

1. Somehow, they get the necessary theories and skills.
2. E-learning gives more possibilities in finding resources.
3. E-learning shortens the process of doing assignments.
4. More assignments make them more active.

Whereas those answering 'no' were because:

1. What counts most to students is simply how to get good grades, not the substance of knowledge.
2. The subject they have taken up is not always in line with the future job they can get.
3. Most of the subject learned are for the sake of character building, hence not directly related to the needed job-skill.
4. The e-learning potentials have not been used at its best yet. The system is still trial and error.
5. The four-year study program (undergraduate program) is more like a formality; at most it gives them only the basic stuff, not sufficient for doing a particular job.

Here are some samples of the answers:

"Yes, digitization makes it easier for me…. E-learning really helps me, especially in shortening the processing time. I can use more resources (ebooks/open access articles, etc.)."
"I don't think so… with this limited interaction with the lecturers I'm afraid my study will take longer time to the completion"
"Not all the materials I can understand. Only a few are interesting. Some courses help me master theory and update my skills, though. But overall, I think the system is too rigid."
"I think, many lecturers only explain the material but barely show its relevance to the real world of work… But some courses do support for finding a job."
"The exams are mostly based on memorization, yet in reality what you have memorized is not always important. However, overall, the courses help me achieve my goals, although some things are still to be developed further."
"Enough with digital learning. During my study the use of e-learning was far from effective. It was more like a formality. Basically, the process of learning was still conventional, but it doesn't matter; it did help me achieve my goal nonetheless."

The second stage was conducted in the form of focus group discussion (FGD) in two classes, namely, the class of Critical Reading, and the class of Cultural Entrepreneurship. This was meant to verify the data from the questionnaires and to sharpen the analysis in connection with the issue of creativity. The First FGD was in the Critical Reading class. The main aim of the reading class is to understand critically the meaning contained in a text. This requires complex skills involving the ability to distinguish fact from theory, assumption, belief, and personal opinion; to identify the main issue; to feel whether the use of language is neutral or emotional; to reformulate in the reader's own words the quintessential message of the text in the form of an abstract and keywords; and to question the basic statement as well as to build their own arguments. These are particular creative skills which need a serious training and cannot be taken for granted as something that will grow naturally. Students are trained to be active and creative readers –not just passive-, to see beyond data or between the lines. In the FGD, it was found out from both the experience of the lecturer and the students that:

1. For the students the reading class was considered 'heavy', and they found it difficult to focus for a long time.
2. Despite the fact that students mostly still rely on books as their main resource (the answer to the Q3 above), the prevalence of internet as a kind of "god of knowledge" is undeniable.
3. It was also acknowledged that, although they do read, they are barely able to catch the quintessential of the reading text and to connects diverse points into a significant insight. They are used to picking pieces of information instantaneously, but hardly able to see the bigger picture critically and creatively.
4. In this regard, the digital learning process used in the class of Critical Reading so far has not made any difference yet, although the students now mostly understand how it means to be an active reader and that it takes a serious practice to do it.
5. However, the discussion came up also with some suggestions, for example, to use more interesting and intriguing materials that may arouse the student's interest; or even to allow the students choose the materials themselves so as to make them feel free to explore creatively.

The second FGD was conducted in the Cultural Entrepreneurship class. This course is meant to bridge abstract cultural concepts with concrete cultural phenomena. The objectives of this course are to increase students'

sensitivity to their surrounding environment; to find creative solutions to cultural problems happening in a certain area; and to encourage them to take an active role in the problem-solving. The discussion showed that some basic problems were:

1. The difficulty among the students to relate philosophical-theoretical mind-set to concrete issues;
2. Incapability to analyze problems;
3. Unfamiliarity with empirical research (they are students of Philosophy Department).
4. Before the pandemic condition, direct discussion in small groups somehow helped overcome some of the problems. During online learning, however, discussions didn't work smoothly, both with the lecturer and among the students.
5. But when the students were assigned to choose themselves the cultural phenomena that they wanted to observe empirically (field study), things became a lot better.

When asked as to what kind of methods they preferred during online learning, the answers were:

1. Using movies/videos, not simply relying on PowerPoint -which they considered boring.
2. Discussing 'hot' topics of their own choice.
3. Being allowed to lead the discussion.
4. Being given the freedom to explore resources in responding to assignments.

5. Conclusion and Recommendations

If what is needed in this age of uncertainty is creativity that is rooted in prudence, deeper insight into life, and integrated vision of the world, the research shows that the practice of digital learning during the pandemic condition so far contains some inherent constraints to meet the need. Several constraints have been identified, namely:

1. while digital learning process is meant to be a student centered process, in fact students are weighed down by too many assignments with tight schedule and rigid regulations that result in lesser reflexivity and critical thinking.
2. This is made worse by less direct interaction with the lecturer and imperfect online mechanism, especially during pandemic condition, which by and large disturbs the flow of discussions and the guiding process between students and the lecturers.
3. While online learning relies on student's capability to read creatively and critically, and reading is one of the keys in shaping a profoundly creative self, it seems that young generation today, at least in Indonesia, still need a lot of training in critical reading.
4. Student's endurance in reading long passages is mostly weak.
5. The ability to see bigger picture of information creatively and critically is low
6. The capability to relate abstract theories to concrete phenomena is not well trained.
7. The main concern of students is simply to get good grade,
8. The uncertainty of their future job after they have completed the study makes the learning process barely effective.

Notwithstanding the flaws, some positive potentials of the digital learning process have also been identified:

1. Digital learning process basically opens more possibilities in finding resources.
2. It makes the process of learning more practical and faster;
3. It gives ample opportunity for students to be more active and to explore creatively.
4. It makes them feel more alive

If substantive creativity is to be rooted in prudence, deep insight and integrated vision of the world, the data implies that the deeper layers of such creativity -summed up- are: a) 'engagement experience', and b) capability of 'going beyond data' (In Critical Reading: beyond the text. In Cultural Entrepreneurship: beyond socio-cultural problems). In this regard, creativity can be fostered better if we can incorporate the following elements in the process of learning -most of which are suggested by the students themselves- such as :

1. to allow the students find materials of their interest,
2. to let them lead discussions,
3. to use more video/movies instead of mere PowerPoint,
4. to give them swift feedback,
5. to provide references for them to explore.
6. to let them synthesize different or contradictory information

7. to stimulate them to connect theory and praxis of life
8. to focus more on values and meanings beyond data

This research has several limitations, namely: the area of respondents being only in West Java Indonesia; the method used -exploratory research method- is somewhat loose. Notwithstanding the limitations, we believe that the issue of creativity needs to be scrutinized from more specific perspectives like what we have done. To get better view on the issue, other research can continue with different area of participants (informants) and other research methods.

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