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HYBRID LEARNING IN PHOTOGRAPHY CLASS AMIDST PANDEMICS

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ABSTRACT

Arguably, recreating virtual space has been a slow-developing concept to many skeptical creative media communities and scholars. With the rapid growth of new media technologies, analogue or digital, society must exercise critical thinking in how these realizes the former impossibilities. Contemporarily, technologies are embedded in our everyday life, and yet we were not certain if these strongly transformed us. Unexpectedly, the COVID-19 pandemic radically disrupted every aspect of life, including education, and as a result educational institution demanding for new systems and structures that ensure uninterrupted learning for all students. We were forced to modify our activities, and it is a fact that many struggles and postponed. It is an entirely diverse challenge experienced by creative media educators. The direct hands-on instructions needed to be converted to live and/or recorded virtual simulation. Countless educational institutions have experimented with a hybrid learning approach to deliver teaching and evaluated their learning outcomes. In this article, I will share my experience in hybrid learning for one of the visual communication design courses, specifically photography.

1. INTRODUCTION

There are many innovative learning designs to be used and applied across disciplines. Both lecturer and practitioner have their own challenges in sharing effective practice and create learning activities (Masson et al, 2008). Unexpectedly, the COVID-19 pandemic radically disrupted every aspect of life, including education, and as a result educational institution demanding for new systems and structures that ensure uninterrupted learning for all students. Schools and universities are exploring numerous educational models to meet the needs of their students (Microsoft, 2021). I as a lecturer and practitioner simultaneously, found online teaching is rather difficult for design studio courses due to the lack knowledge of theoretical education framework, so most of studio courses I teach relies on common sense to deliver the teaching material effectively. Classroom in digital and online formats has existed for more than a decade and learning spaces is still highly conceptualized as physical learning spaces that is going online or becoming digital (Hilli et al, 2019). One of many educational terms that recently explored excessively is Hybrid Education, which is a teaching and learning model that meets the needs of students, teachers, and staff with integrated education technology tools that address blended learning, professional development, staff support, the learning gap, social-emotional learning, flexible scheduling, and attendance e.g., Microsoft Teams. In early 2020, Hybrid Education has shifted from an esoteric notion to the de-facto norm. We found ourselves where majority of our activities is hybridized. This forces all professional fields, layers of society and educational institution to go through hybridization process in such short amount of time. We share spaces with families, co-workers and bringing classes into our homes and students into theirs (Cohen et al, 2020). In Hybrid Education, learning comes first, and can include many of the instructional approaches we are familiar with, this includes Online Learning, Distance Learning, Remote Learning, Blended Learning, Flipped Learning, and finally Hybrid Learning (Davis, 2020). A hybrid learning environment is a mix of all the models. A hybrid approach to learning builds on the successes of these models to intentionally create a learner-centered experience that is "profoundly personalized, relevant, and engaging. Hybrid Learning focuses on authentic, relevant learning that provides students with voice, choice, and agency that incorporates peer tutoring, student self-assessment, and collaboration among

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instructors and students to design and carry out the best learning experience (Microsoft, 2021). Hybridity is highlighting challenges and opportunities that transpire in blurring boundaries between learning, working, playing, living and other experiences that emerge. Boundaries of online and offline, on-site, and off-site, synchronous, and a-synchronous, formal, and informal, vocation, and recreational and more (Cohen et al, 2020). There are two dimensions of hybridity in learning spaces, first, the interweaving of formal and informal social structures in an activity system. The second dimension is the combination of physical and digital tools mediating an individual's interaction with the world and society. Hybrid learning also allows learners to meet with course instructors and their peers face-to-face to discuss, debate, question, and acquire instruction (Alnajdi, 2014). Arguably, there are two approaches in Hybrid Learning: Andragogy and Pedagogy. The andragogical approach engages learners in the learning experience that focuses more on self-directed style, while the Pedagogical provides instruction to teaching and learning strategies and focuses on traditional classroom learning (Wong, 2008).

Hybrid learning is necessary because face-to-face learning and online learning each have their shortcomings (Wong, 2008). In the pandemic situation, the face-to-face scenario must be transferred virtually via ubiquitous conferencing applications and discussions conducted online. There is also a notion of Hybrid Learning Spaces (HLS) which share an affinity to Blended Learning, but it is not to be confused as one because it is not an instructional strategy that reverses the traditional learning environment and moves instructional content outside the classroom, it is something different in its own right (Hilli et al, 2019). Later in this article's analysis shows the result of how hybrid learning is an excellent addition to support student's independent study. Consciously, educators should have realized that technology as a medium that can simplify and assist the learning process to the maximum, the prerequisite in 21st-century education and there are many innovations and inventions in the form of multimedia devices that can support the contemporary world of education 4.0 (Hediansah and Dwi Surjono, 2020). Thus, HLS is a learning context that moves beyond online and offline spaces, but also challenges the divisions between teacher/student roles and analogue/digital communication media, which offers new 'complex hybrid breeds' that provides new possibilities for collaboration in higher education (Hilli eta al, 2019). With media technology support, it is possible to transport teaching space virtually by using analogue media, converts them to digital contents, then deliver and/or store the contents then finally creates online interaction.

2. LITERATURE REVIEW

2.1 Hybrid Learning Model, Hybrid Learning Spaces and Future Learning Space

Why transporting teaching space is imperative to the Visual Communication Design study program? Arguably, there is a misconception surrounding the idea of teaching Design in Universities, which commonly a 70:30 Theory to Practice ratio, but realistically contradictory to what is considered effective of 70:30 ratio Practice to Theory. This brings us to consider Design studies are partially and undeniably vocational because the study program has several mandatory workshop or studio courses to prepare students with practical skills required by the industry. Therefore, this pandemic situation forces the lecturer to deliver most of the studio courses to the online platform, which requires observing learning objectives from a design perspective. From a design perspective, a learning environment is broader than the archetypical classroom that the agents and roles are clear: the teacher is the expert and students are the learners to acquire knowledge, but rather a two-way communication such as brainstorming, discussion and project feedback. The space is physical with a familiar setup, but if this scenario is broadened to a learning environment that crosses the boundary, it becomes much more complex. It is becoming necessary to design the learning space in advance, aligning all elements as well as perspectives into a coherent and adaptive whole. However, applying the concept of learning space needs to be done carefully, as we naively believe that this could automatically lead to the intended learning outcomes because of its innovative, collaborative, powerful and real-life attributes to future educational practices (Zitter and Hoeve, 2012). Truthfully, these promising words of motivation need to be broken down into several understandings of what we are trying to achieve, and several technicalities of how we attempt to reach the goal.

Let us begin with several understandings on how we can achieve Hybrid Learning is to know the type of design framework. Based on the 5i Design Framework for a Hybrid Course suggested by Anthony Wong, Hybrid Learning Model (HLM) used in this article is leaning more towards the Interaction and Independent, because online studio course involves a high level of group interactivities that includes learning communities and peer review. For HLM in this article, students are also suggested to work and think independently by searching online information as discussed in the assignment brief by the lecturer (Wong, 2008). Due to the pandemic, the situation present in this article does not allow face-to-face teaching and learning, however, there was nothing changed in the way it was delivered, as if it were done as face-to-face. This article is suggesting new HLM based on digital media studies, due to the complex nature of the creative media learning environment, which need to consider all possibilities to successfully deliver studio courses, including the usage of Hybrid Learning Spaces (HLS) that will be in deeper discussion and the focus of this article.

Technology is permeating physical spaces and so spaces we teach, and learning is changing. Simultaneously, internet-connected technology (IoT) creates interfaces of virtual spaces and real-world phenomena. These dynamics grows hybridity presence, hence distinctively blurring boundaries in the context of learning and activity. HLS is potentially beginning to be recognized by education systems in promoting significant learning and increasingly use pedagogical HLM (Cohen et al, 2020). One of contributing

examples that make bold attempts to formulate a design language for HLS is Liat Eyal and Einat Gil in Levinsky College in Tel Aviv, Israel, which they proposed design patterns set in academic settings for Future Learning Spaces (FLS) and has been operating for one and a half years (Eyal and Gil, 2020). FLS is a dynamic and technology-rich learning environment that enables teaching and learning using innovative pedagogical methods, it is a new theoretical concept in the higher education landscape. FLS enables a collaborative and interactive learning experience by using diverse technologies in which parties involved can share responsibility for the content, technology, and space. There are three reasons why space is important to teaching and learning, firstly, it is a mediator and moderator between instructor and student behavior. Secondly, it emphasizes the way of space is used as designed activity by the lecturer. Lastly, the physical characteristics of space such as size, layout and colors hold potential and meaning to how space is used (Eyal and Gil, 2020). For that reason, this article will illustrate the teaching format conducted in Digital Photography and Videography class at the Visual Communication Design study program at Sampoerna University, because it corresponds to the HLS/FLS criterion above. One of four design-patterns of FLS that matched to this article's activity and also suggested by Eyal and Gil (2020) is design-pattern number two, which is Teaching in an Interactive Orchestrated Learning Space; Creating learning stations with exploratory tasks while each group works separately and in parallel to the other groups on different aspects of the subject. Eyal and Gil pointed out that by using these design-patterns, the lecturer addresses challenge variations in implementing innovative pedagogy such as equal participation, documentation of learning, focusing attention and concentration in learning, and looking at a variety of perspectives and dynamism in class management (Eyal and Gil, 2020). Furthermore, this article will evaluate the best learning result from three students enrolling in the course, by interviewing each of the students separately. These students used different type of cameras and light source for their still-life photography assignment, which we will see that the outcome of the interviews is a reasonable comparative analysis.

2.2 Mitigating Circumstances in Photography Technology

We decided to change how we teach, which means that we need to compromise and customize the academic rules of conduct as well. The purpose of academic rules of conduct has always been to broaden student success opportunity, giving more headroom for students to personalize learning strategies throughout their three to four years of study. One of the rules that this article focuses on and has a direct influence on student's learning outcomes is mitigating circumstances. Mitigating or extenuating circumstances is to decrease harmful situation that can affect students' achievement and aspirations, where these situations are beyond student's control that usually takes adverse effects on their personal and academic life in one way or another (Achinewu-Nworgu and Nworgu, 2015). It is worth note-taking that HLS/FLS needs to be accompanied by an in-class mitigation policy allowing students to utilize whatever photography tools available for them. A pandemic is a circumstance beyond student's control that can harm student performance in their course work. Another reason why mitigation for photography students is necessary to be applied in the pandemic situation is that the required tools are ubiquitous and affordable e.g., instead of using a DSLR camera, they are allowed to use smartphone camera because they have no access to the university's equipment. However, one of the biggest challenges is that this type of mitigation policy has a direct impact on the course delivery, which typically the lecturer needs to uncover many probable photography scenarios and outcomes to the students. The lecturer must allow students to submit claims for mitigating circumstances ensuring student success and maintain the highest standard of education, which in some cases student requires rapid and direct feedback before an assignment production or submission. Some situations that are not normally acceptable for mitigating or extenuating circumstances i.e., the pressure of work, minor illness, or self-induced conditions (colds, hangover etc.) and many more (Achinewu-Nworgu and Nworgu, 2015). If there are conditions that the lecturer is unsure if the situations are acceptable, the recommendation would be referring to the Higher Education Institution's (HEIs) mitigation policy. If HEI has not released mitigation policies, the lecturer should immediately create a class mitigation policy on the study program level.

In this article, the mitigation is based on global force majeure and urgency, which is impossible for HEI to design mitigation policy on such short notice. Decision on mitigating design students that enrolled in photography class is based on the recommendation by industry practitioner, Raja Siregar, which allows students to use a smartphone camera. Thus, this photography class allows students to use any camera including a smartphone's camera by considering the quality of current smartphone cameras are par to the industry standard Digital Single-Lens Reflex (DSLR). He admitted that he captured pictures using a smartphone camera for personal use just to get a quick and good result. This is also a good practice for students to attune to practice basic photography whenever and wherever possible. The base of this recommendation is that, contemporarily, the most smartphone has already embedded with competitive analogue camera quality into it, which is also supported digitally by software e.g., camera digital zoom. One of the most successful smartphones and camera collaboration to date that demonstrates high-quality image result is Huawei and Leica on their Huawei P40 Series smartphone, which also received an award from Technical Press Image Association (TIPA) in 2020 for the Best Photo Smartphone. Contemporarily, there are other smartphones following this path such as Vivo and Zeiss on their X60 Series, and Sony also with Zeiss on the Xperia Series, as well as OnePlus and Hasselblad on OP9 Series. From an educational perspective, such technological development, the smartphone industry creates major impacts in supporting learning success for design students, especially if they can make these smartphones more affordable and accessible in price e.g., the educational price for students or bridging partnership with HEI.

3. METHOD

Current education must be able to describe a better meaning for students as students and teachers as educators. This is inversely proportional to the education situation which has not been able to become an effective facilitator of the learning process. Instructional (learning) is a stage used by educators to direct students in certain conceptual conditions to help them achieve learning targets (Hediansah and Dwi Surjono, 2020). The conceptual condition presented in the article refers to emulating photography studio by using multimedia devices. Decisions on investments in HLS are critical for institutions as its implementation is costly given the spaces making all learning options available for learners. Thus, one of the most crucial indicators to assess cost-effectiveness in learning space implementation is through satisfaction and experience of learners (Xiao et al, 2020), which we will see in the result and analysis. Expectantly, this article can be one of the guidelines for teacher and lecturer that requires HLS/FLS in their teaching's circumstance and explore the full potential of this concept. Now that we have already broken down our understandings of the learning space concept, this next guideline consists of several technicalities on how we attempt to reach the goal.

Frankly, emulating teaching space based on the HLS/FLS method is much more difficult than described by words. The lecturer that plans to conduct HLS/FLS for creative courses must fully understand the fundamental concept of sharing learning space virtually, this includes classroom, lab, and studio, and how can this be conceptually effective in delivering the material. This is where the mixture of digital media and pedagogical mindsets come into play. Initially, the lecturer needs to understand the concept analogue to digital signal conversion, because this is an attempt to convert face-to-face activities into lecturer and student audio-visual communication. Analogue means the hardware signal that is used and digital means the converted signal received from the hardware as seen on Figure 1.

Figure 1: *Analogue input to digital output (A/D Conversion), simply known as Hardware to Software conversion.*

Firstly, the lecturer needs to understand the specificity of media technologies that can support specifically the lecturing concept. The media specificity ranges from the input and output hardware feature that is available in the equipment used. Currently, the standard video conversion is through High-Definition Multimedia Interface (HDMI) cables, these cables are available in various formats, i.e., HDMI, Mini HDMI, and Micro HDMI. It is imperative to use HDMI as the video conversion format for online learning, as it is presenting better screen resolution for media streaming. On the other hand, standard audio conversion is by using an audio interface or also known as a sound card connected through Universal Serial Bus (USB) cables, i.e., USB, Mini USB, and Micro USB as seen on Figure 2. For audio conversion, there is a second type of cable, which is jack cable or specifically TS, TRS, and TRRS, which also comes in various sizes, the one that used in this experiment is the TRS type with 2.5 mm cable as seen on Figure 3. It is recommended to use an audio interface as the main audio signal receiver as it has a hardware audio processor that guarantees clarity in verbal instruction.

Figure 2*: HDMI cable varieties.*

Figure 3: *Variety of TS, TRS, and TRRS audio cable sizes.*

As shown in Figure 4, Sony NXCAM has HDMI output and Canon 6D has Mini HDMI output, these are cameras used as visual instruction. These outputs are converted by using two Video Capture devices with a USB cable for each of them. These capture devices are detected automatically by the computer as camera inputs. Similarly, for the audio, Zoom H4N is used as an audio interface connected with a USB cable, and to the audio interface, a 2.5mm lavalier microphone is plugged into it. These outputs will be detected and collected by Open Broadcasting Software (OBS) as input signals for OBS Virtual Cam, which it will need to be manually replaced by the built-in webcam in the computer through Microsoft Teams device settings. OBS is also capable of recording the session, this is very useful to evaluate the teaching delivery which will be explained in the next paragraph. Before the class, the lecturer must conduct media setup and testing to ensure teaching continuity as well as avoiding technical difficulties that can cause an abrupt halt to the student learning experience. The recommended scenario is recording while rehearsing the class to ensure effective delivery of the material

by evaluating each recorded session. The recorded session will provide a new dimension to the 'hybrid' of Hybrid Pedagogy that some of its focuses are physical learning space/digital learning space and analogue/digital materials and technologies [7]. Additionally, evaluating the material, the teacher or lecturer must evaluate the equipment's technicalities, e.g., battery life, this is crucial if the equipment depending on batteries to be powered.

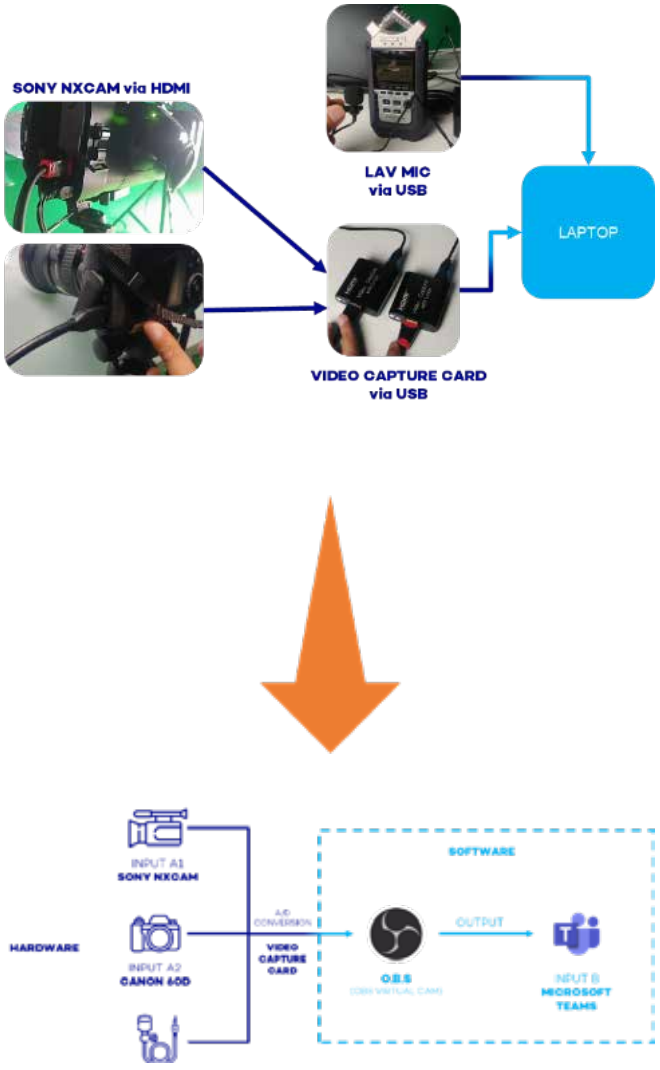

Figure 4: *Understanding what the inputs and outputs on the media tools are. Then, planning analogue to digital conversion scheme.*

Secondly, teaching floor plans needs to be well-prepared, so the lecturer has good mobility around the space. This can be done by using any software that can generate shapes or basic illustration. As seen in Figure 5, the teaching space has been prepared so the lecturer has good mobility around the area, as well as not block students view from the NXCAM camera. The layout was done using Microsoft PowerPoint because that is what available on my computer, but this is possibly done by using Microsoft Paint as well.

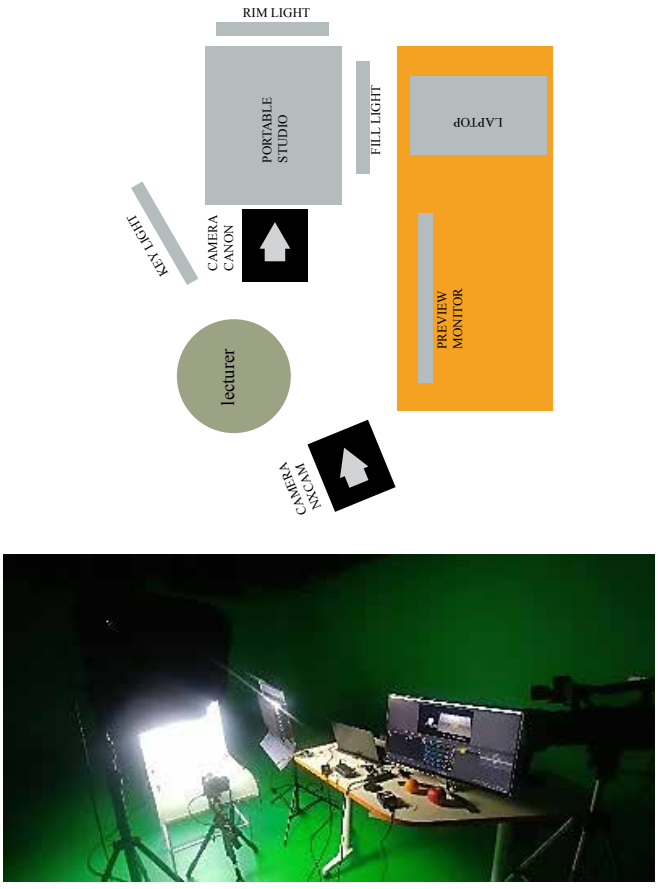

Figure 5: *Left side is the prepared floor plan. Right side is the actual setup.*

Thirdly, the lecturer must set up a broadcasting interface, so it is possible to control the camera views digitally via keyboard shortcuts and interchangeable during the class. It is encouraged to customize the view, letting the students understand what has been done in the overall setup and how it impacted what is captured as shown in Figure 6. At this point, teaching rehearsal is crucial, assuring the lecturer that the material delivery is equivalent to face-to-face class, which is making sure students can see what they need to see. Finally, keep reminding ourselves of the importance of user-experience when it comes to preparing the equipment because by constantly troubleshooting, we can accidentally make the framework more technical than what it needs.

Figure 6: *OBS scenes setup.*

4. RESULTS AND DISCUSSION

Below is the teaching and learning result of the mentioned photography class delivered through an online meeting application using HLS / FLS principles specifically design-pattern number two. It is seen in Figure 7, she applied photography techniques to her Still-Life photography assignment as accurately as what is instructed in class with excellent result, which is shown in Figure 8. Although there are many other examples to be presented in this article, however, the chosen ones are the best representing the learning outcome of the class, which are lighting and composition in photography.

Figure 7: *Learning result from the students (Left to Right): Keke Putri Komalasari, Shareen Rhema Angela Gumulya, and Eros Kuncoro.*

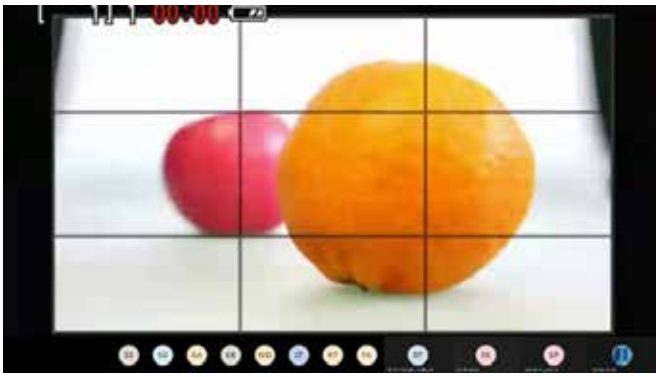

Figure 8: *Camera angle shown in the virtual classroom by using OBS Virtual Camera.*

The chosen works were also produced using different type of cameras, i.e., a DSLR Camera, a Mirrorless Camera, and a Smartphone Camera. The method of analyzing the result is by collecting survey of all students then interviewing each top 3 students separately via Microsoft Teams chat and with the same set of question:

Students	What type of camera are you using?	What type of lighting are you using?	Do you own the equipment?	Do you have access to a photography studio?	Do you find the online photography lighting class useful?	How do you rate the online photography lighting class?	Grade
1 (A)	DSLR	Natural Light	Yes	No	Yes	5	90%
2	Mobile Phone	Custom Lighting	Yes	No	Maybe	3	90%
3 (C)	DSLR	Natural Light	Yes	Yes	Maybe	4	89%
4	Mirrorless	Natural Light	Yes	Yes	Yes	5	83%
5	Mobile Phone	Natural Light	Yes	No	Yes	4	76.5%
6	Mobile Phone	Natural Light	No	No	Maybe	4	75.4%
7	Mobile Phone	Natural Light	Yes	Yes	Yes	4	73%
8 (B)	Mirrorless	Custom Lighting	No	No	Yes	5	80%

Table 1*: Students Survey Result*

As seen on Table 1, Student A agrees that although she was not in the campus photography studio, the teaching delivery by using the HLS/ FLS method has helped her understood photography techniques and basic studio setup. Student A was using her own Canon EOS 600D and only using natural light (sunlight) for her photography assignments, thus by using a DSLR camera, her work is the best result out of the three examples above. It is still interesting that she can manage to produce the result by relying on natural light, it is difficult as it is not portable lighting, instead, she moves the set up near the window where the light source located. On the other hand, the second-best example is by Student B, in which he used a mirrorless camera, specifically Olympus EPL 6 and a flashlight for his assignment. Student B does not own a camera, instead, he had

borrowed it from his friend, and it is already challenging for Student B to completely pass the semester. He admitted that HLS / FLS helped his understanding of lighting in photography, sadly he does not have access to professional equipment, thus he cannot practice the knowledge right away. Lastly, the third-best example is by Student C, which was using a smartphone camera specifically Oppo A31, which shows the distinctive contrast color of smartphone's digital camera processing. She uses a combination of natural light, a smartphone's flashlight and/or a simple study desk lamp to light the scene. During the interview, it is so encouraging to know that Shareen believes her smartphone and limited lighting source can produce good images, and that confidence shows in her work. Student C admitted that the lighting course that uses HLS / FLS does help her understood basic lighting principles. In conclusion, although these students do not have access to a professional photography studio, and type of camera is not the learning barrier, but it is the photo light source that they have limited access to. Thus, applying mitigation policy to online photography classes is imperative and harmless to the production quality. As we see with the result above, even when the students are using minimum lighting as natural light and flashlight, the quality is not compromised by the naked eye. It is for future recommendation to provide students with information on the affordable and accessible light source for their photography assignments. Currently, there are many options of affordable and portable LED lighting available. Despite having no access to proper lightings, the image quality submitted by students are beyond expectation, it shows student's strong determination in reaching high learning standard especially during the pandemic. Even if the class expectation is decreased, the lecturer must have similar, if not, more confidence and determination as to the students. Overall students result as below:

Now that we have assessed the result using chosen students' satisfaction and learning experience as indicators, the cost of equipment used to setup HLS/FLS is arguably effective remembering the online class is very rich in content thus it gives a huge impact on the quality of student's independent study. Potentially, this method opens broader possibilities in creative media teaching with the support of rapidly developing technology and research and exploration of HLS / FLS in education must be well documented to upgrade the adaptability of delivering the highest standard of education. The student's interview above is also a result of one of the 5i Design Framework, which is Independent, because of successful Interaction of the Interactive Orchestrated Learning Space from FLS design-pattern number two. The learning independence is becoming automatically reliable, which means by blurring the context of learning and activity, it is also increasing its consistency. I am recommending to all design lecturers to experiment with modern media technology by following the combination of the 5i Design Framework and FLS Design-Pattern methodology. It will open a bigger educational context, not only alternative methodologies but also customizable teaching and learning experience. Another variable that directly affects HLS / FLS in this article is mitigation on student's capability to achieve what is required by the assignment, e.g., mitigating on equipment used by students. Mitigate expectations and avoiding the mindset of decreasing learning quality but rather shifting it to discover new normality in setting newer higher education standards. If education is the benchmark to the power of knowledge, then we are not exercising the power enough that we do not have versatility in using the knowledge itself and be hybrid.

5. CONCLUSION

The end of the COVID-19 pandemic is yet to be confirmed, and there are many challenges in the education sector, specifically in creative media education to deliver the course effectively. As an educator, we need to stay positive and motivated to deliver teaching and achieve successful learning outcomes in creative ways. We need to adapt to modern technologies and sacrifice a little bit of teaching authenticity to survive and rest assured that the student success will follow. Also, as a reminder for HEI to always look forward to the global pandemic when designing teaching and learning policy, especially one that could help mitigate students with their hands-on and/or vocational courses. By imposing education standards into a much more adaptable environment, with online class and mitigating circumstances, we must aware and have a strong assumption that there will be unforeseen drawbacks to the situation. One issue that is highly possible to occur is that our students are not completely equipped with the skills that the creative industry needs if the industry itself does not change post-pandemic. However, creative industry transformation amidst pandemic is an entirely different discussion, HEI has to prepare supplementary support after students graduated. Indonesia's Ministry of Education and Culture program of Kampus Merdeka might be the solution by decentralizing higher education focus to the creative industry professionals including study to internship credit exchange, practising independent project and entrepreneurship. By exercising this program, students are expected to level with the industry-standard despite the learning customization during their study throughout the pandemic.

The future of HLS/FLS is very bright, not only portable and *softwarized*, but education can also be as experimental as embedding Virtual Reality and Augmented Reality technology as part of the teaching and learning tools to attempt creating immersive education. Not limited to discuss and explore the deliberately growing Adobe E-learning Community, where the community shares a variation of free e-learning projects including Virtual Reality and Interactive eLearning. Therefore, the future work of this article will discuss and experiment with 360 cameras to record and in delivering teaching materials, as well as using VR goggles as the learning tools. These are attempts to drive education as far as technology develops and to not being aware of unforeseen events such as a pandemic or any possible worse situation that might severely impact the educational field. Sequentially, the future article will also analyze feedbacks from more students to have more unique variables.

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