

Self-Conducted Learning Experience for Homecoming Animation Students During Pandemic

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ABSTRACT

Since early 2020, the pandemic that starts within the eastern region of Asia has spread vastly through every country globally. Learning everywhere has been pushed towards nonphysical interaction. Learning models and activities have been combined between online and offline courses. There are hybrid learning, remote learning, and blended learning. In animation and design education, digital rooms have always been present in learning activities, but in this pandemic, all learning activities are pushed towards personal accessibility. Most animation students in Universitas Negeri Malang rely on the campus' studio and lecturer's proactivity. Thus, this research is conducted to produce a long-term learning module accessible for remote learning with familiar language and un-tutorial-like learning videos. Most animation tutorials are in English; while working-class students struggle to understand the language, the learning must proceed. The research uses qualitative methods to collect data samples about the effectiveness of studying independently for working-class students of Game Animation (GA) program. The result indicated that students are more focused on personal achievement not collectively because of their own pace and time of learning. This result should reference the institution that learning should not only be restricted through time and universal standards, but rather towards independent and/or student-centered learning.

Keywords: *learning animation, independent learning, video tutorials, animation curriculum, Indonesia, homecoming students*

1. INTRODUCTION

In 2018 the Game Animation Vocational program (GA) developed a curriculum based on the National Occupational Map [1] with three graduate profiles: asset designer, game designer, and animator. The curriculum has courses designed to improve student knowledge and skills to achieve the profile mentioned based on the map [1]. For example, for an asset designer graduate profile, students must take courses that emphasize visual skills, such as drawing shapes, anatomical drawings, gesture drawings, sculpting, creating 2D assets, and creating 3D assets. The 3D asset creation course is a tiered course consisting of two focus studies, namely environments/props and characters.

The curriculum is implemented for class 2019 students who will now reach the third semester of their whole study. In the third semester, they will take an advanced 3D asset creation course, characters, after taking environments/props in the previous semester. In this course, students will learn about the creation of charac-

ter designs using 3D techniques. The main goal of this study is that students must understand the shape topology because the model made must have the correct topology so that it can be used in the next game or animation production process. In this course there is also a supplement study material, namely *rigging*. *Rigging* is a bone system that allows 3D models to be moved by animators. In this course, the stages of character design creation follow pipeline patterns such as *modeling*, *skinning*, *texturing*, and *rigging*.

The lecture portion in the Game Animation vocational program prioritizes practice rather than theory, so students often carry out activities in campus computer labs, which have adequate computer and internet specifications. However, students must study at home because the world is currently hit by the COVID-19 pandemic. Various problems occur such as lecturers cannot see directly how the student's process of assignments, so feedback cannot occur directly; differences in the specifications of computers/laptops that make students ob-

structed in doing assignments; as well as the uneven internet connection in the homes of each student, so they are constrained in taking direct online lectures. These factors make learning activities must change, from conventional learning to distance learning and provide flexibility to each student.

The delivery of distance learning must be effective, simplified and easy-to-access. This can be done by creating guidelines and reinforcement in the creation of learning content and delivery. Furthermore, it is said that motivation and guidance are very essential to produce active involvement and interaction through various activities. During this pandemic, the relationship between students and lecturers needs to be improved, for example, with interactive presentation, or project feedback from lecturers to students by utilizing technology that is not limited to group chat, educational portals, or online meeting apps. Even though there are many contents in the Internet about 3D character creation, digital teaching materials are still needed that are in accordance with the characteristics of Game Animation vocational program students as well as to break language barriers – because up until now, most 3D animation tutorials provided in the internet is produced in the language that most Game Animation vocational program students barely understands. Learning can be student-centered with digital teaching material content from lecturers, which can lead them to achieve learning outcomes in the 3D Asset Creation: Characters course during the COVID-19 pandemic.

1.1. Emerging Problem

The initial hypothesis regarding 3D animation course were that students faced several learning problems in the COVID-19 pandemic, such as indirect feedbacks, differences in hardware specifications, and uncertain internet connection. However, based on the questionnaire distributed to students of the animation game study program on May 19, 2020, with 24 correspondences, most of the student problems were internal disturbances at home, as much as 75%. Internet problem was in number two as much as 66%, followed lecturers' lack of explanation (41.7%). The next questionnaire point was about the readiness of students for asynchronous lectures, 11 people answered that they were not ready because the main reason was an erratic internet connection, and 13 people answered that they were ready because the main reason was that the teaching and learning process had to take place whether they were ready or not.

Majority of the students' surroundings are not particularly familiar with online learning, because these 19 students still live in areas with different families living under the same roof. This situation is very common in

some places in Indonesia, specifically in small towns or villages. This also becomes one of the recurring disturbances in GA students in their distance learning. This condition usually does not occur when they are in student housings. A study conducted by [2] investigated students in student housing are more likely to be more motivated and engaged with their courses. Due to health protocols, student housings are closed and inoperable to reduce the virus spreading. That is one of the reasons students are going back home to their family houses and working extra hours for their families. Thus, this disruption in their regular learning process becomes a visible obstacle as well.

From the data exposure, the priority for problem-solving lies in overcoming loopholes in the disruptions. In order to bridge students who cannot attend synchronous lectures continuously at every meeting or make times during specific hours, it is necessary to develop digital and easily accessed materials for the 3D Asset Creation course, which will be taught in this semester of 2020/2021. It is supported by students' statements that they prefer video tutorials made and shared by lecturers compared to videos on the internet. The main reason is that it is in accordance with the material being taught and in Indonesian, so it is easier to understand. The 3D Asset Creation course is a new course that is only presented to students of class 2019. Therefore, it is necessary to develop digital teaching materials, especially during the COVID-19 pandemic.

2. LITERATURE REVIEW

Independent learning, also called student-centered; personalisation; and/or ownership of learning [3] requires a theoretical and practical approach in pedagogical practice. Independent learning or also commonly known as 'self-regulated' learning, majorly depends on the learner [4]. Students or learners 'have a meta-cognitive understanding of how they are learning; they are motivated to take responsibility of their learning; and they monitor and structure their own learning experiences' [4]. Meaning that students have ownership of their learning experiences and can schedule their agenda to achieve the main learning goal. Meta-cognitive understanding refers to each learner's capability to design their learning experience for the course that relates to their practice and their ability to self-evaluate their practice. This provides conscience for learners to assess what they need to complete their goal, for it is from their peers [4], or from within themselves [3].

It is also necessary to consider effective factors in learning independently. Affective support could be proven hard in individual learning, it is easier to access when support is given by someone that has completed

the same learning process [4]. In this process, learners need to acknowledge their own responsibility to complete their own goals. Therefore, affective aspects include the motivation of learners to direct and conduct their own teaching and learning experience through learning materials and perform better in higher order thinking skill [6].

Several studies have been conducted in the past years about advancement in video-based learning. First comparable study is from Lloyd and Robertson [7] that uses video-based learning for tutorials on inputting t-test in SPSS. Comparison was made with a paper-based tutorial of screenshot with 12 minutes video with narration. They conducted two sessions. In the first session with 31 participants, and majority of them found that the video tutorial resulted better in post study than those with paper-based tutorials. In the second study, participants who performed better are given more time to review the paper-based tutorial during testing. Yet the findings are, the group who uses video without time advantage still performs better.

An experiment was conducted by giving participants used a written tutorial such as webpage tutorial and video-based instruction on finding articles in ERIC, or online research resources [8]. The video was 2-3 minutes long, while the webpage instruction is given as detail as possible for each database. There were 21 participants in this experiment and after given training with both materials. Mestre found that after training 76% of the students prefers using webpage tutorials as it is more details in instructions. The post-test was also resulted better than the video tutorials. Majority of participants expressed that in videos the right steps was often amiss because the steps in the video is too fast. Nonetheless, they suggested putting the video as supplement in the webpage instruction to highlight featured tutorials that requires demonstration.

Different study was also conducted [9] on how to use Word for Mail Merge and automatically creating a table of contents. Both paper-based tutorials and video tutorials are prepared for each task. A 24-pages written and screenshot paper-based tutorial and 13:30 minutes video for mail merging task, while for table of contents task are 9 pages instructions with screenshot and 3 minutes video. 28 participants were asked to refer to tutorials when in need, not as a base to pass an exam or testing. The result is there are small differences between paper-based and video tutorials in completion. Both tutorials resulted in completion above 90%, and both measure of success were medium. Interestingly, Alexander reported in how the participants used the tutorials. The participants watched the whole video tutorials for completing each task while the paper-based instruction was used while doing the task. Therefore, further findings show

that the participants feel that video tutorials had difficulties finding information about the task rather than in paper based.

A comparison study was conducted to find out the differences between paper-based tutorials and video-based tutorials on learning software [10]. The scheme was to prove whether video-based tutorial improved the learners understanding or the other way around. There were four distinct methods used by the researcher, which are 1) full-paper based, 2) mixed paper-based preview and video procedure, 3) paper-based procedure and video procedure, and 4) full on video-based learning materials [10]. The result was learners who used video-based learning materials such as video procedure and video preview, or both favoured significantly, rather than paper-based. Participants who used video-based tutorials did a lot better than those who used paper-based. From this research, video-based tutorials support learners in completing their task better.

Comparing these recent studies [7] found that video tutorials helped their participants to complete an exercise in inputting t-test on SPSS. While [8] study showed that video-based tutorials did not help participants as much as detailed instruction on webpage (equivalent to paper-based written instruction), but preferably videos are attached to help demonstrate several information. In [9] study, both tutorials (paper and video-based) were equally helpful for participants to complete their tasks, although the usage of both tutorials are different which resulted in the majority of the participants felt that information is difficult to access in video-based tutorials. In addition, [10] also compare both tutorials for learning software. They found that video-based tutorials were preferable because they demonstrate the step-by-step process clearly, although suggestions were made as well for designers to focus on the core of the video and lessen its relative weakness.

3. METHOD

Based on the student described problems in the previous sub-chapter, the solutions offered aim to improve their 3D Asset Creation: Characters course material for the whole semester that administers distance learning [11]. This improvement can be done in various stages, such as: developing digital teaching materials according to the needs of the vocational programme Game Animation students, Faculty of Letters, Universitas Negeri Malang; Providing feedback on student work through an online platform, as well as a place to showcase the work of 3D Asset Creation courses.

This digital teaching material development activity resulted in 7 video tutorials and 1 guide for the 3D Asset Creation: Characters course. This development process

includes three main study materials from the five study materials that will be taught in the course. The three study materials are modeling, UV mapping, and texturing. Each division is 3 videos for modeling studies, two videos for UV mapping studies and 2 videos for texturing studies. With this video, it is hoped that students can learn independently about the 3D modeling process in the character design stage. All seven videos guide students to create a simple character design. This video tutorial uses in real time, not sped up like the tutorial on YouTube™, because it wants to show the whole process to students.

From the 7 video tutorials, students are expected to understand how to create 3D assets in the field of character design, from modeling to texturing. With the style of delivering sentences such as in class, students are expected to understand the content of the video more easily. Thus, even though students' study at home during the COVID-19 pandemic, students still get a classroom-like learning atmosphere. These seven video tutorials total 1.69 Gb. This is a fair amount for a video tutorial that includes five sessions in the first half of the lecture. This video is the basis provided for the creation of 3D character design field assets. So that later at final projects or assignments, students can apply the character model creation technique to more complex character designs.

4. FINDINGS AND DISCUSSION

This experiment is conducted in 12 weeks online sessions to resemble GA students' actual learning environment and was followed by 24 second year Universitas Negeri Malang students with 14 of them working part-time. Before the pandemic happened, GA courses were often conducted after offices to ensure their presence in physical class. After March, physical classes are not much in preference to carry out classes. From March to early June, the classes are conducted through an online platform with online tutorials and virtual assignments.

GA Vocational program students use the tutorials in their own time to overcome disturbances. Specific timeline becomes irrelevant, yet goals in a particular period are necessary. Learning time (and submission time for assignments) are often done later in the evening, after their home active hours, majority (75%) of the students stated that they are more likely to watch the video tutorials after 7 pm in the evening for several reasons, such as later in the evening they can concentrate better because the disturbances were less likely to occur because their family members are resting. Also, there are less activities during the evening. Therefore, they have time to access their video tutorials. Some of the students (15

out of 24) also stated that their internet connection is better in the evening. We have yet to dig deeper into this specific research question, and it might be an interesting perspective to explore. Several reasons that GA students wrote after finishing their assignments were that more students felt motivated to study when the disturbances were not quite intense – in the evening, rather than fitting the learning sessions into their day activities. This aligns with independent learning explanations about their agency to schedule their own learning [3] and understanding as well as building their own needs in order to complete the learning process [6].

The tutorials help students to make their own progress as milestones, as well as there is less competition, so students are more focused on their own learning. The learning materials are provided in both video and written instruction in the webpage. In finishing their assignments, the students tend to refer to video tutorials more than their webpage instructions. Feedbacks about the use of video tutorial more than written instruction also dominates the students' post assessment review. A Large part of the students prefers to watch the tutorial while doing their assignments, so they are using the video like step-by-step instruction and pause in every important point of the video. These findings align with [10] and [7] that video tutorial does help students although on how they use it is almost like written instruction [9], video instruction is still necessary for students to see live demonstration. These video tutorials may not be the most ideal learning experiences, as stated by most of the participants, yet it aids students to achieve learning and complete their assignments at their own pace and time.

5. CONCLUSIONS

From this research and experiment on giving video tutorials as learning materials for GA students of Universitas Negeri Malang that demographically from working class family that have a complex living situation (such as big family living in a house), disturbances in learning from each home could be overcome by using video tutorials with students' own pace. Learning motivation from students can also be built in specific times that disturbances seldom occur, which is evening times around after 7 pm. In this complex situation, students find their will to learn and push their own ownership of learning after assessing their own situation. Therefore, a suitable learning material must be provided in order to aid students' learning, such as video tutorials.

Although proven effective to help students achieve their learning outcomes, the use of video tutorial for GA students still needs a lot of improvements, such as shorter time in video tutorials based on each and every sec-

tion of every learning portion, so students are able to digest every video easily and students are more focused to work on their task after fully understanding the video. Written instruction also plays an important part in students' learning process because it helps the students to mark their personal accomplishments on the learning materials. From a policy perspective, this research also suggests that learning students are capable of determining their own learning pace and scheduling their experience in learning. Therefore, this research is open for expansion into institutional study on learning and assessment policy using digital media and/or distance learning during the pandemic. Video-based tutorials have been proven helpful in supporting distance learning, students and participants that experienced video tutorials for their learning felt that video gives visual demonstration that is easier to follow, but indeed written instruction allows students to mark their progress.

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