

PROJECT-BASED LEARNING IN ISLAMIC CULTURAL HISTORY LESSONS THROUGH CREATING DOCUMENTARY VIDEOS: CHALLENGES AND BENEFITS ACCORDING TO STUDENTS

Mohammad Izdiyan Muttaqin¹, Ahmad Dardiri², Ulfah Fajarini³

¹Universitas Indonesia, ^{2,3}Universitas Islam Negeri Syarif Hidayatullah Jakarta
e-mail: ¹moh.izdiyan@ui.ac.id, ²ahmad.dardiri@uinjkt.ac.id, ³ulfah.fajarini@uinjkt.ac.id

Abstract. This study aims to reveal the learning process based on documentary video projects in the subject of Islamic Cultural History and students' opinions about the learning process. The research was conducted during the pandemic when online learning was implemented at MAN 4 Jakarta. This is a qualitative descriptive study, data was collected through observation, answers from an open-ended question questionnaire from 27 students, and interviews with 2 students. The results of this study indicate that the documentary video-based learning process can be carried out through three main stages: preparation, execution, and assignment collection. Each of these stages has details of their respective activities. The students revealed that the difficulties they faced were the problem of managing time, as well as difficulties in recording narration and editing. The benefits that students feel include that they feel that this video-based learning trains them to communicate, to work together, to be more independent and more creative. The students also felt that they gained new skills in the learning process, such as the skills of editing videos and uploading them on social media. Some students suggested that the video project continue with some improvements, and others wanted an easier assignment. The researcher concludes that documentary video project-based learning has many benefits and is one of the alternative learning models that can be chosen to provide variety in learning process and to develop the 21st century skills.

Keywords. Project Based Learning; Islamic History and Culture

A. INTRODUCTION

1. The Emergence of Active Learning

Various issues in the world of education have begun to emerge. Colleges and universities are challenged to produce graduates who can play a role in society, both in the professional field and in other fields. Because of that, various new learning methods have emerged in the world of education. Problem-based learning, competency-based learning, and project-based learning are just a few examples (Nakada, Kobayashi, Okada, Namiki, & Hiroi, 2018). There is also what is called "active learning," which requires students to be not only passive but also more active and bring up their ideas and initiatives. These active learning models have finally begun to be in demand at various levels of education, both in primary, secondary and higher education (Murillo-Zamorano, López Sánchez, Godoy-Caballero, & Bueno Muoz, 2021).

In active learning students have opportunities and to interact more with their friends. Researchers have finally brought up new skills that need to be developed in the modern era, which are better known as 21st century learner abilities (Jacobson-Lundeberg, 2016). These consist of the ability to communicate, the ability to be creative, the ability to think critically and the ability to collaborate. These very important abilities are of course very difficult to develop if learning still relies

on the old learning model which only requires students to come sit and listen to the teacher's lectures. Among the existing learning models, the project-based learning model is one of the choices used by various educational institutions (Smith & MacGregor, 1992). With the project-based learning model, students are not only required to be able to answer questions verbally, but also be able to create certain works in groups in the form of projects, so that students' abilities to communicate, collaborate, think critically, and be creative are more developed (Hussein, 2021).

2. The Project Based Learning

Project-based learning (PBL), or project-based learning, is a student-centred learning model. Some of the characteristics of this learning model are the independence of students; constructive investigation; target setting; collaboration; communication; and reflection on phenomena in the real world. This learning model has been tried and used at various levels of education, from elementary to university level. The effectiveness of project-based learning (PBL) cannot be generalized. There are many things that affect the effectiveness of Project-Based Learning (PBL), including the existence of modern digital technology, the ideal group formation process, the ability of teachers to support and motivate students, and the balance between PBL instruction and implementation. PBL can be introduced to students in the classroom in several ways: teachers and schools can use the existing curriculum from outside parties, or they can develop their own curriculum using a Project-Based Learning (PBL) approach. Learning using Project-Based Learning (PBL) is indeed more challenging. Project-based learning requires teachers to change their role from giving instructions to being facilitators of learning. In Project-Based Learning (PBL), the teacher must provide tolerance for noise, crowds, and student movement in the classroom. Teachers must use different classroom setting models. Teachers are also required to develop their ability to be able to provide support for students in carrying out their projects, including support in terms of the ability to use technology. Ongoing training and support are the keys to successful project-based learning (Guo, 2021). According to Thomas (2000), Project-Based Learning (PBL) is "a type of complex task that arises from challenging questions and problems and requires students to design, solve problems, make decisions, or investigate various activities." learning (PBL) gives students the opportunity to work independently for a certain period. Project-Based Learning (PBL) has the goal of producing a product or presentation" (Sholikhah, 2019).

In Project-Based Learning (PBL), students focus on using the knowledge and skills they already have, and not just absorbing information, as they usually do in a normal classroom. All Project-Based Learning (PBL) activities are organized around a big question or title that is relevant to the learning material. In Project-Based Learning (PBL), students develop their own learning abilities to answer the challenges given. This encourages them to develop 21st century skills because it encourages them to seek knowledge independently by linking learning content with phenomena in the real world. Project-based learning (PBL) also facilitates students to explore their potential in terms of careers, use of technology, communication, and utilization of the content being studied (Bell, 2010).

So, project-based learning was tried, practiced, and then the results and developments were analysed. Some students feel the benefits of project-based learning, while others feel there are difficulties and challenges. Research on project-based learning has also been carried out in various parts of the world. Some studies show that there are positive and negative effects of project-based learning activities. Oktavioningsih's 2018 research revealed that project-based learning can improve students' communication skills. Because project-based learning activities cover students' ability to communicate actively with their friends and also with their teachers, This research is also supported by various other similar studies (Oktavianingsih Eka, 2018).

Another study conducted by Fawaida in 2021 also showed that the activity and creativity of students increased when teachers used project-based learning models (Budhi & Fawaida, 2021). DwiYanti and Rosana in 2020 also found an interesting fact: the experimental class that used project-based learning had a percentage of students who achieved the KKM of 96.87%, while in the control class that did not use the project-based learning model, the percentage of students who achieved the KKM was only 6.25%. This striking difference, of course, allows us to understand the impact of the project on the learning process of students (DwiYanti & Rosana, 2020).

Another study conducted by Aninda, Permatasari, and Ardianto also shows the same thing. In a study conducted at a high school, it was found that the implementation of students in the experimental class using project-based learning was quite good; students also gave good responses to project-based learning; and that the STEM literacy of students in the experimental class was also better than the control class that did not use project-based learning. In addition, students in the experimental class also felt satisfaction and increased learning motivation after doing project-based learning (Aninda, Permatasari, & Ardianto, 2020).

In a 2020 study, Almulla revealed an interesting thing. He answered the critics who often doubted the effectiveness of project-based learning. He also collected data from 124 teachers using project-based learning. As a result, it is known that project-based learning increases the involvement and activeness of students in the learning process. Project-based learning also enhances a collaborative, sustainable, and unique learning process. In project-based learning, or project-based learning (PBL), students are encouraged to be more involved in learning through discussion, brainstorming, and planning activities. At the end of his research, Almulla concluded that Project-Based Learning (PBL) is highly recommended for use at all levels of education (Almulla, 2020). Another study conducted in Slovakia by Maros, Korenkova, and their colleagues also revealed interesting things. conducted research on 123 students who were divided into two classes: the experimental class and the control class. Both classes are taught by the same teacher but with different learning models. In the experimental class, the teacher uses a project-based learning model. While in the control class, the teacher only uses the blackboard as a learning medium. An evaluation of the learning outcomes is carried out after the learning process is complete. The evaluation results show that the project-based learning in the experimental class has a higher effectiveness than the learning in the control class that does not use the project-based learning model. Through the questionnaires distributed, almost all students also revealed that they felt that project-based learning was very interesting for them (Maros, Korenkova, Fila, Levicky, & Schoberova, 2021).

However, there are other things that need to be revealed, namely about the difficulties, shortcomings, and challenges faced by students in the project-based learning process. There have been studies discussing this, such as the research conducted by Hussein in 2021. In this study, Hussein revealed that challenges in Project Based Learning (PBL) arise in conflicts between students in collaborating. In addition, challenges also arise when students have difficulty understanding the instructions and directions given by the teacher in Project Based Learning (PBL). Hussein recommends that teachers develop good communication with students and between students. In addition, the planning process and flexibility in Project Based Learning (PBL) are very crucial (Hussein, 2021).

The author sees that evidence continues to emerge about the many benefits that teachers and students get from the Project Based Learning (PBL) process. One of the projects that is often chosen to be done in the learning process is a video creation project. So, in this study the author took the initiative to carry out project-based learning making documentary videos in learning Islamic Cultural History material. The side that will be studied is the implementation process, and about the responses and difficulties felt by students in undergoing the learning process based on documentary video projects.

B. METHODS

This research is qualitative descriptive research. Data was taken through observation and a questionnaire in the form of open questions given in the Google Classroom Application. This research was conducted at MAN 4 Jakarta. The students who became the research sample were students of MAN 4 Jakarta class 10 Religion for the 2020–2021 academic year, with a total of 34 students. The subjects taught in the class are the subjects of Islamic Cultural History. In this qualitative method, data collection, data analysis, and data interpretation can be carried out simultaneously. Data saturation is often carried out. The five steps taken in qualitative research are: Choosing locations and samples; gathering qualitative data; preparing and conducting structured interviews; and 4) developing and maintaining relationships 4) Arrange and analyze the qualitative data collected (Malik, 2013).

C. RESULT & DISCUSSION

1. Choosing Project Based Learning of Creating the Documentary Video

The author has been given the task of teaching Islamic Cultural History at MAN 4 Jakarta since the odd semester of 2016. There is an interesting phenomenon observed by the author, namely that students are often bored with the monotonous learning process. The author usually provides material by means of lectures, followed by giving quizzes in the form of oral questions, which are answered orally by students as well. There are times when the author also gives other tasks, such as making mind maps or even assigning PowerPoint presentations per group. During the learning process, there were times when the students asked the teacher to play the video through the projector. The students want to watch videos together because they are bored with the monotonous learning process. Because many students asked to watch videos, the author took the initiative to look for videos related to Islamic Cultural History learning on the YouTube portal. This author did this in 2017. The interesting thing is that the author found that videos that actually match the material in the SKI textbook are very rare. Most of the History of Islamic Culture videos on YouTube at that time were still in foreign languages, such as Arabic and English. So, the author also took several videos from YouTube that were appropriate to the SKI learning material and displayed them in class as a distraction activity.

Over time, the author sees an opportunity to contribute to the creation of Islamic cultural history content on YouTube. Since videos on Islamic cultural history are so rare, why don't we make our own videos? The author also took the initiative to invite students to take an active role in creating Islamic Cultural History video content. Then came the idea of doing a video documentary for project-based learning in the subject of Islamic Cultural History. The documentary video project was chosen because the author considers that the product that will be produced through this project, namely a documentary video on the history of Islamic culture, is needed by teachers and students throughout Madrasas in Indonesia. So that the projects carried out by students will provide benefits for the students themselves and for the community who need Islamic Cultural History content. So, the learning process based on the documentary video project in the Islamic Cultural History Subject at MAN 4 Jakarta began to be carried out in the fall of the 2018-2019 school year and continued with some improvements until the pandemic period. The questionnaire data collection in this article was carried out after one of the project-based learning processes carried out in the odd semester of the 2021-2022 academic year. Between November 2, 2021 and November 16, 2021. At that time, MAN 4 Jakarta was still implementing online learning.

2. Learning Steps in The Documentary Video Project Based Learning Model

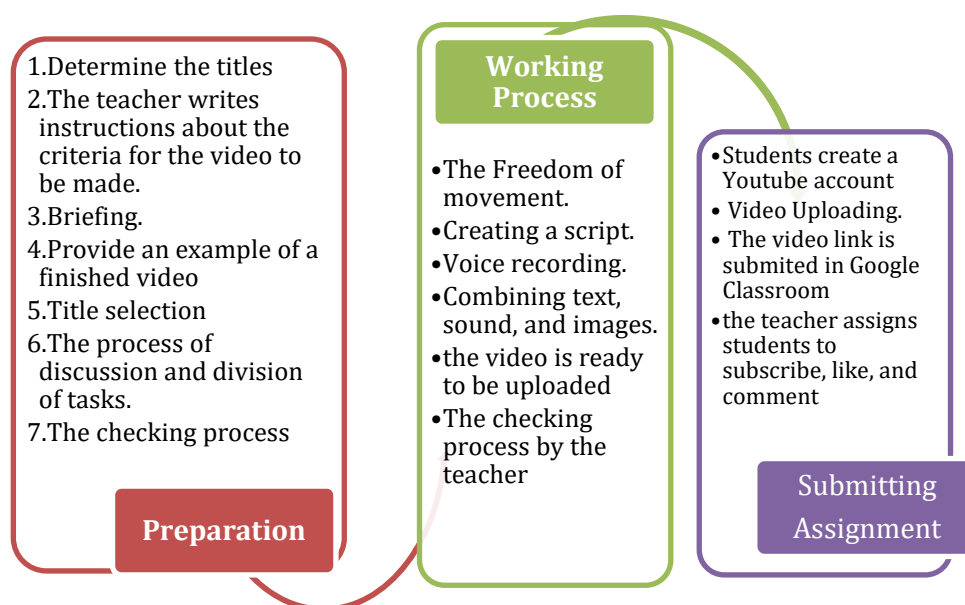


Figure 1. The Process of Video Documentary Project Based Learning (Author's Analysis)

Based on the author's observations and experience at MAN 4 Jakarta, video-based learning can be done before and during the pandemic. Before the pandemic period, the learning process was carried out in the classroom. Title distribution activities, progress reports, and instructions are given in class orally. However, during the pandemic, learning is done through Google Classroom media and virtual Zoom meetings. And there are certain steps that teachers can take when they want to provide video project-based learning. These steps include the following:

Preparation Before Making

1. Determine the titles or materials for which the video will be made. The list of titles is written in the form of a file that is available online and can be accessed and edited by all students. So, all students can write their own names and choose their own title of video.
2. The teacher writes instructions about the criteria for the video to be made. These instructions can be displayed in written form on the whiteboard and in Learning Management Systems such as Google Classroom. The criteria for the documentary video to be made are as follows: (in Indonesian language or English, duration 2-15 minutes, in the form of a documentary or a combination of music, narration, and images, it is recommended that the video be equipped with text or subtitles, in addition to videos students are also required to make thumbnails or covers of videos that will later be uploaded on YouTube).
3. Briefing. The teacher explains about the video project that will be explained verbally to students through virtual meetings, or verbally during offline learning.
4. Provide an example of a finished video in the attachment of an assignment in Google Classroom or displayed via zoom online or in class through a projector so that students get an idea of what kind of video should be made.
5. Title selection. Each student is given the freedom to choose the title and group friends they want. Teachers provide files that all students can edit online, so students can write their own name next to the title they want to choose.
6. The process of discussion and division of tasks. Each group discusses and divides the tasks in the project to be implemented. The tasks that need to be divided are scriptwriter, narrator, and editor. The division of tasks is flexible, one student can do more than one assignment.
7. The checking process by the teacher. The teacher re-assures that all students have received titles and have also received assignments as scriptwriters, narrators, or editors.

Working Process

1. The Freedom of movement. Each student is given the freedom to discuss and collaborate in making videos. The students are given the freedom to use their handphone/laptop according to their needs. The process takes about 2 weeks. Because the SKI material has 1 meeting per week, during the two meetings, there will be no formal teaching and learning activities, because the activities have been replaced with creating video documentary projects.
2. Creating a script. Script is made based on the title given by the teacher, according to the Islamic Cultural History material in the curriculum.
3. Voice recording. Students read the script that has been made and record the reading in the form of sound or audio.
4. Combining text, sound, and images. Students combine sound recordings, scripted texts, supporting music, and appropriate illustrations in a video editing application or Video Editor. Supporting music, and picture illustrations can be found on the internet. The selected video illustration can be in the form of a video or an image. Video illustrations can be searched on YouTube and illustrated images can be searched on Google Images.
5. After all the video editing process is complete, the video is ready to be uploaded, students can continue their activities by making a video cover or Thumbnail which will be uploaded on YouTube.
6. Process monitoring. In the next two meetings, the teacher supervised and monitored the video processing process. Under normal conditions, teachers can check project progress directly, during a pandemic, teachers can ask short questions about the progress of project work through Google Classroom. Teachers also provide support, encouragement, and motivation to students to focus on work, so that they can complete video projects on time,

either through oral delivery during normal times or through virtual media meetings during a pandemic.

Assignment collection.

1. Students are asked to create a Youtube account for those who have not.
2. Completed assignments are uploaded to the student's Youtube account.
3. YouTube video links are collected via Google Classroom Video Appearance.
4. The teacher displays the videos made by the students. The teacher provides input, comments, and assessments of the videos made.
5. To develop a Youtube channel created by students, the teacher assigns students to subscribe, like, and comment on their friends' Youtube videos.

These are the steps that need to be taken in the video documentary project-based learning process based on the author's analysis. These steps, of course, still require various adjustments and refinements. These steps are actually also a development of the project-based learning implementation experience carried out by the authors between 2018 and 2021. Changes can be made if necessary to suit the needs and abilities of students. Such as the collection deadline which is sometimes delayed due to insufficient time. There are times when there are problems in uploading videos, so it needs to be re-uploaded because of problems in the videos being made.

Student Opinion

There are 34 students who take part in the learning process in grade 10 religion subjects of Islamic culture and history using the video project learning model. All 34 students were asked about the difficulties they faced and the benefits they felt, as well as suggestions they wanted to give about the learning process carried out. Of the 34 students, those who responded to this question were as many as 27 people, or 79.4% of the students. Questions are given in the form of open-ended questions; each student is given the freedom to express his opinion without being limited by certain choices. There are three questions given by the teacher or researcher, namely:

1. What difficulties did they experience in the video documentary project-based learning?
2. What are the benefits they got from the video documentary project-based learning activities?
3. What are the suggestions they would like to give to improve the learning process?

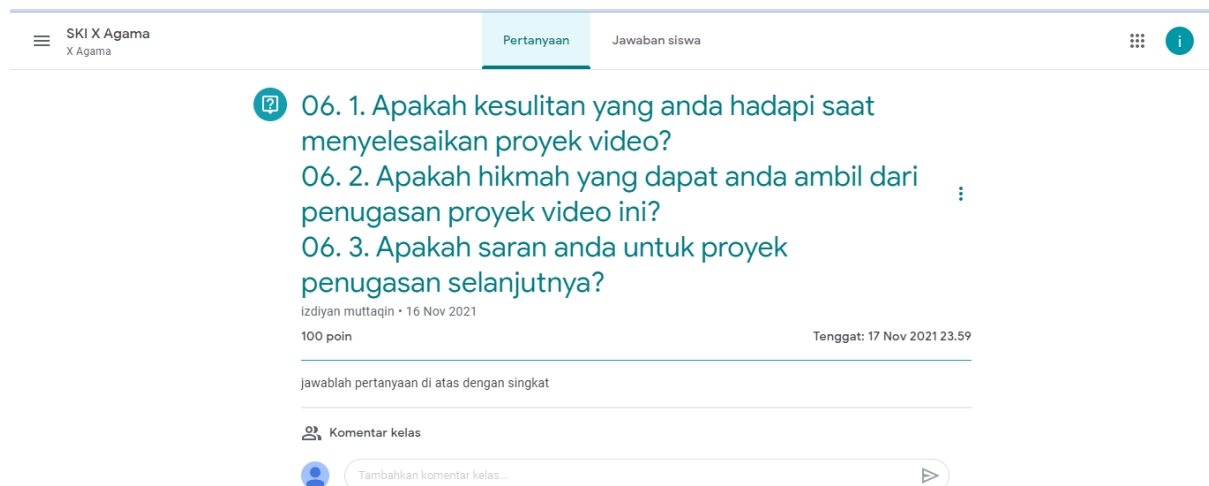


Figure 2. Questions Displayed in GoogleClassroom

Of the three questions, there are several answers that often appear among the 27 answers collected from students' answers. We can divide the answers of these students into several parts or groups, namely the difficulties they face in making documentary videos, the benefits they feel, and

suggestions from students for improving the learning process. In addition to open-ended questions in Google Classroom, the author also conducted structured interviews with two students who took part in the video project-based learning process at MAN 4 Jakarta. In the interview, the author asked the same thing that was asked in the question in Google Classroom. The results of student answers through Google Classroom and interviews can be concluded as follows:

Benefits and Difficulties in The Video Documentary Project Based Learning Process According to the Students

Benefits	Difficulties
<ol style="list-style-type: none"> 1. The project trained students to be careful in doing things. 2. Students become accustomed to work with friends. 3. It trained students to communicate to achieve the same goal. 4. It made students understand the process of uploading YouTube videos. 5. It made students understand the video editing process. 6. It made students understand Islam more deeply (through the material made). 7. It trained students to care for each other and understand each other's conditions in a group with their respective activities. 8. It made students feel the variety of learning and do not always feel that the learning activities are monotonous. 9. It trained students to help each other and support each other such as by watching videos of other students and giving each other subscribe, like, and comment on YouTube. 10. It made students able to explore the ideas they have in a project. 11. It improved the ability of students to use technology in learning. 12. It trained students' independence in doing assignments. 13. It Increased students' learning motivation. 14. It trained students to find solutions to the problems they face. 15. It trained students to be responsible for the assigned tasks. 16. It trained students to be patient in doing the tasks given. 17. It increased the creativity of students. 18. It trained the cohesiveness of students in doing assignments. 	<ol style="list-style-type: none"> 1. Many students have difficulty entering text or subtitles during the process of adding text or subtitles to a documentary video. because the process of adding subtitles requires a long time and high accuracy. 2. Students must do several recordings of narration due to noise from the recording location or mispronunciation. 3. Difficulty during the video editing process 4. It is difficult because learning is done online. 5. I have difficulty managing my time. 6. Difficulties due to unfavourable home conditions (for recording). 7. Constraints on devices that do not support video editing due to the lack of specifications in the device, such as the lack of memory in mobile phones. 8. It's hard to find a copyright-free illustration video. 9. Difficulty when converting videos after editing. 10. Difficulty when uploading to YouTube. 11. The difficulty of having to sacrifice study time. 12. Difficulty in unifying perceptions with group friends.

Difficulties of The Project

The difficulties felt by students in the learning process of video documentary projects based on their answers to open-ended questions include the following points: During the process of adding text or subtitles to a documentary video, many students have difficulty entering text or subtitles. Because the process of adding subtitles requires a long time and high accuracy. Some Students also said, there is no difficulty at all because the group of friends is very active in completing the project. Some students also felt the project was difficult because they must do several recordings of narration due to noise from the recording location or mispronunciation. Students also mentioned difficulty during the video editing process. Because some students do not have experience in editing video. Because this questionnaire was collected during the pandemic time, where students were studying online, some students said, it is difficult because learning process is done online. Maybe because the learning spirit is often different and there was some trouble due to the connection issue. Some people said they felt difficulty in time management. Because the learning time in school often not enough to complete the project. Some students also said that they felt Difficulties due to unfavourable home conditions (for recording).

Besides that, some students said that they experienced Constraints on devices that do not support the video editing, due to the lack of specification in the device such as the lack of memory in mobile phone. During the editing process they also experienced that It's hard to find a copyright-free illustration video. They also had Trouble when converting videos after editing. During the uploading process they had trouble when uploading video to YouTube. Because it takes long time and it needs some settlement in describing the title, video description, and setting the thumbnail. They also had trouble because they must sacrifice study time to complete the project. Some others expressed their difficulty in unifying perceptions with group friends.

Benefits of The Project

Through student answers to open-ended questions, students feel the real benefits of being assigned to make a documentary video project. The benefits felt by students can be summarized in the following points: The project trained students to be careful in doing things, Students also said that they become accustomed to work with friends, the project also trained students to communicate to achieve the same goal. Students also said that the project made students understand the process of uploading YouTube videos. In addition to those benefits, students also found that the project made students understand the video editing process, because some of them never learn how to edit the video before. The project also made students understand Islam more deeply through the material and script they made. The project also trained students to care for each other and understand each other's conditions in a group with their respective activities. Because they must do the task together through collaboration in groups. The project also made students feel the variety of learning and do not always feel that the learning activities are monotonous. The project also trained students to help each other and support each other such as by watching videos of other students and giving each other subscribe, like, and comment on YouTube. The project also made students able to explore the ideas they have in a project. Beside that, the project also improved the ability of students to use technology in learning.

Some students reported that project trained their independence in doing assignments. It Increased their learning motivation; it also trained them to find solutions to the problems they face. Students also felt that the project trained them to be responsible for the assigned tasks. The project also trained students to be patient in doing the tasks given, it increased the creativity of students, and It trained the cohesiveness of students in doing assignments. Those were the students' answers about the benefits they felt after carrying out video project-based learning in the subject of Islamic Cultural History. These opinions were abstracted from all the incoming answers, which amounted to 27 answers. The author found that some students had the same opinion with each other.

Suggestions for The Improvement in Learning Process

There are various suggestions and inputs given by students to improve the learning process based on the experiences they feel when participating in video project-based learning. Suggestions for improvement can be summarized in the following points:

1. It is better if the assignment is in the form of a podcast because it will be easier to understand.
2. No need or no suggestion whatsoever
3. Individual activity should also be assessed because group work activities require the ability to interact with other students.
4. Subsequent assignments for video documentary projects can be reused.
5. If possible, there should be no more video assignments.
6. It is better to practice answering questions, but it has to use handwriting or applications.
7. It is recommended that the processing time to be extended because of the difficulty level of making documentary videos.
8. It is better if the teacher gives an easier assignment.
9. It is better to continue with the assignment of making digital posters.
10. It is better to make a quiz.
11. It would be very exciting if an assignment was made to visit historical places.
12. There should be no minimum number of subscribers.
13. The next assignment is to make an Islamic drama.
14. The next assignment is to read the hadith with friends.

Thus, the suggestions given by students regarding improvements in the learning process in the future. Some opinions do have a direct relationship with documentary video-based learning activities, and others want the assignment to make a documentary video not to be continued and be replaced with another assignment. This is of course a consideration for teachers who want to use video documentary projects in the learning process of Islamic Cultural History lesson

D. CONCLUSION

Video documentary project-based learning is a learning model that can be chosen by teachers of Islamic Cultural History lesson as well as other subjects. Documentary video creation projects do have a high level of difficulty. This project is suitable for use for students who can think independently, such as at the high school and college level. An internet connection, supporting devices, and a supportive environment are also needed to be able to run this documentary video project-based learning. It can be concluded that the video project-based learning process can be divided into three main steps: preparation, creation, and collection of assignments. Each stage has its own details. The difficulties experienced by students are in the stages of recording narration, editing, and uploading videos. In addition, students also find it difficult to manage their time to work on video projects, because the project of making a video documentary takes a long time. Learners feel that they get many benefits from the video documentary project-based learning process, the learning process trains them to communicate, work together, care for each other and support each other. From this video project-based learning, students also gain new experiences and skills such as video editing skills and uploading videos on their own YouTube channel. We suggest other researchers to explore the learning satisfaction rate after learning using this PBL of video creating documentary video. Quantitative data were also expected to give better understanding about student's learning experience, that is what this research lack the most.

REFERENCES

- Almulla, M. A. (2020). The Effectiveness of the Project-Based Learning (PBL) Approach as a Way to Engage Students in Learning. *SAGE Open*, 10(3). Retrieved from <https://doi.org/10.1177/2158244020938702>
- Amir, L. R., Tanti, I., Maharani, D. A., Wimardhani, Y. S., Julia, V., Sulijaya, B., & Puspitawati, R. (2020). Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia. *BMC Medical Education*, 20(1). Retrieved from <https://doi.org/10.1186/s12909-020-02312-0>
- Aninda, A., Permanasari, A., & Ardianto, D. (2020). Implementasi Pembelajaran Berbasis Proyek Pada Materi Pencemaran Lingkungan Untuk Meningkatkan Literasi Stem Siswa Sma. *Journal Of Science Education and Practice*, 3(2). Retrieved from <https://doi.org/10.33751/jsep.v3i2.1719>

- Bell, S. (2010). Project-Based Learning for the 21st Century: Skills for the Future. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 83(2). Retrieved from <https://doi.org/10.1080/00098650903505415>
- Budhi, H. S., & Fawaida, U. (2021). Pengembangan Perangkat dan Model Pembelajaran Berbasis Proyek Mata Kuliah IPA Terpadu Melalui Pendekatan STEM (Science, Technology, Engineering and Mathematics). *Jurnal Ilmiah Edukasia*, 1(1). Retrieved from <https://doi.org/10.26877/jie.v1i1.7969>
- Dwiyanti, E., & Rosana, D. (2020). Pengembangan Perangkat Pembelajaran Berbasis Proyek untuk Meningkatkan Keterampilan Proses Sains Peserta Didik. *Jurnal Ilmiah Pendidikan Fisika*, 4(2). Retrieved from <https://doi.org/10.20527/jipf.v4i2.2099>
- Fardani, D. N. (2020). Pembelajaran Sejarah Kebudayaan Islam dengan Strategi Mind Mapping di Madrasah Aliyah Negeri 3 Boyolali. *Jurnal Pendidikan Islam Al-Affan*, 1(September).
- Garcia-Huidobro, J. C., Nannemann, A., Bacon, C. K., & Thompson, K. (2017). Evolution in educational change: A literature review of the historical core of the Journal of Educational Change. *Journal of Educational Change*, 18(3). Retrieved from <https://doi.org/10.1007/s10833-017-9298-8>
- Golann, J. W., & Torres, A. C. (2020). Do no-excuses disciplinary practices promote success? *Journal of Urban Affairs*, 42(4). Retrieved from <https://doi.org/10.1080/07352166.2018.1427506>
- Gran, P., & Owen, R. (1982). The Middle East in the World Economy, 1800-1914. *The History Teacher*, 15(4). Retrieved from <https://doi.org/10.2307/493473>
- Guo, P. (2021). Project-based Learning: Connotation, Characteristics and Misunderstandings. *Region - Educational Research and Reviews*, 3(2). Retrieved from <https://doi.org/10.32629/rerr.v3i2.319>
- Hussein, B. (2021). Addressing collaboration challenges in project-based learning: The student's perspective. *Education Sciences*, 11(8). Retrieved from <https://doi.org/10.3390/educsci11080434>
- Jacobson-Lundeberg, V. (2016). Pedagogical Implementation of 21st Century Skills. *Educational Leadership and Administration: Teaching and Program Development*, 27.
- Malik, R. S. (2013). Qualitative Research Methodology in Education. *Jurnal Edubio Tropika*, 1(2).
- Maros, M., Korenkova, M., Fila, M., Levicky, M., & Schoberova, M. (2021). Project-based learning and its effectiveness: evidence from Slovakia. *Interactive Learning Environments*. Retrieved from <https://doi.org/10.1080/10494820.2021.1954036>
- Murillo-Zamorano, L. R., López Sánchez, J. Á., Godoy-Caballero, A. L., & Bueno Muñoz, C. (2021). Gamification and active learning in higher education: is it possible to match digital society, academia and students' interests? *International Journal of Educational Technology in Higher Education*, 18(1). Retrieved from <https://doi.org/10.1186/s41239-021-00249-y>
- Nakada, A., Kobayashi, M., Okada, Y., Namiki, A., & Hiroi, N. (2018). Project-based learning. *Journal of the Medical Society of Toho University*, 65(4). Retrieved from <https://doi.org/10.14994/tohoigaku.2017-010>
- Nyoman, N., & Rusli, M. (2017). Prediction of Decreasing Agricultural Land based on Geographic Information System Case Study: Denpasar City. *International Journal of Computer Applications*, 162(9). Retrieved from <https://doi.org/10.5120/ijca2017913364>
- Oktavianingsih Eka. (2018). Meningkatkan Keterampilan Berkomunikasi Verbal Anak Usia Dini Melalui Pembelajaran Berbasis Proyek. *KMP Education Research Conference*.
- Rodrigues, A. L., Cerdeira, L., Machado-Taylor, M. de L., & Alves, H. (2021). Technological skills in higher education—different needs and different uses. *Education Sciences*, 11(7). Retrieved from <https://doi.org/10.3390/educsci11070326>
- Sato, M. (2014). What Is the Underlying Conception of Teaching of the edTPA? *Journal of Teacher Education*, 65(5). Retrieved from <https://doi.org/10.1177/0022487114542518>
- Satterfield, D., & Abel, T. D. (2020). Ai is the new ux: Emerging research innovations in ai, user experience, and design as they apply to industry, business, and education, and ethics. In *Advances in Intelligent Systems and Computing* (Vol. 1208 AISC). Retrieved from https://doi.org/10.1007/978-3-030-51057-2_26

- Sholikhah, M. (2019). Speaking skill and critical thinking skill development through project-based learning method of EFL tertiary students. *Scope of English Language Teaching, Linguistics, and Literature*, 4(2).
- Shunhaji, A., Nawawi, A. M., & Khoirunnisa, U. Q. (2019). Implementasi Manajemen Berbasis Sekolah (Mbs) Pada Madrasah Aliyah Unggulan (Studi Kasus Man 4 Jakarta). *Andragogi: Jurnal Pendidikan Islam Dan Manajemen Pendidikan Islam*, 1(3). Retrieved from <https://doi.org/10.36671/andragogi.v1i3.64>
- Smith, B. L., & MacGregor, J. T. (1992). Collaboration Learning: A Sourcebook for Higher Education. *University Park, PA: National Center on Postsecondary Teaching, Learning, and Assessment (NCTLA)*.
- Uzomba, E. C. (2014). Literacy learning spaces, strategies and opportunities in the information age: The role of libraries in creating and enhancing literacy-friendly environment for national development. *Library Philosophy and Practice*, 2014(1).
- Woya, A. A. (2019). Employability among statistics graduates: Graduates' attributes, competence, and quality of education. *Education Research International*, 2019. Retrieved from <https://doi.org/10.1155/2019/7285491>