

# Design of Educational Social Media as Collaborative Learning in post-Pandemic

Muzakki Ahmad<sup>1</sup>

Faculty Of Computer Science, University of AMIKOM Yogyakarta<sup>1</sup>  
Condongcatur, Depok, Sleman, Daerah Istimewa Yogyakarta<sup>1</sup>  
Indonesia<sup>1</sup>

e-mail: [muzakki@amikom.ac.id](mailto:muzakki@amikom.ac.id)<sup>1</sup>



To cite this document:

Ahmad, M. . (2022). Design of Educational Social Media as Collaborative Learning in post  
Pandemic. *Conference Series*, 4(1), 152–159.  
<https://doi.org/10.34306/conferenceseries.v4i1.711>

**Hash:** ABCSv3pepYHETR974NUS21aMbxK5NdWOaqkIL2z8NCyyBRYk2SJ1F1z2IPjNI53B

## Abstract

*Research on the design of educational social media as collaborative learning in post pandemic is a response to the conditions and impacts from occurred on education in Indonesia after covid-19. Based on data from the Ministry of Education and Culture Indonesian in April 2020, the Analysis of the Quick Survey of Learning From Home in Covid-19 Prevention Period, stated that the number of students who carried out interactive learning online with their teacher was less than 40% and the majority of students learned by doing questions from the teacher and learning independently from textbooks. The ideal teacher competence in online learning is a teacher who can implement video conferencing and can create online teaching materials. The pandemic came suddenly and the readiness of teachers and students in online learning is a factor in the effectiveness of teaching and learning activities in Indonesia. This educational social media design is purpose to facilitate teachers and students in collaborative learning that can be carried out by all teachers and students in Indonesia. This research produces output of educational social media design in the form of data flow diagram and interactive flow of application. The research method used is a combination of literature study and field study in order to obtain effective social media references for education category.*

*The results of the research are in the form of data flow diagrams and interactive flow which can describe the concept of educational social media before being implemented into applications. Data flow diagrams are used for database design and database relationship on application data requirements, while interactive flow is the initial stage in making user interfaces application. So with the results of this research, a prototype of educational social media applications can be drawn as collaborative learning.*

*Keywords: education, social media, collaborative learning.*

## 1. Introduction

The COVID-19 pandemic has forced students to learn from offline becomes to online, so make every educational institution must apply technology as a complementary of teaching and learning activities. Readiness in online learning of each educational institution is different which makes the achievement of learning targets uneven and affects to education quality. The Ministry of Education and Culture in April 2020 through the National Secretariat of the Disaster Safe Education Unit said there were 68.8 million students and 4.2 million teachers and lecturers conducting teaching and learning activities from home. Based on data from the Ministry of Education and Culture in April 2020 from the Quick Survey Analysis of Learning From Home in the Covid-19 Prevention Period, 30.8% of students do not have supporting devices. The number of students with online learning support equipment facilities is 69.2% but only 38.8% of students do interactive online learning with teachers. Students learn from home by learning to use textbooks by 42.9% and working on questions from the teacher by 86.6%. It can be concluded that the availability of learning support devices from home owned by students has not been maximized for interactive learning online with teachers. Students are required to be more independent in studying of knowledge they are learning at school by using textbooks and working on questions from the teacher after trying to learn independently because not all teachers are ready to do online learning. According to the Teacher ICT Competencies Framework by UNESCO, the ideal teacher competency who is ready to do online learning is a teacher who has the ability to run video conferences and create online teaching materials. That is the background for research on the design of educational social media as collaborative learning in post-pandemic carried out to make online learning using special social media focus on education that can connect fellow students and teachers from various regions to collaborate and complement each other.

## 2. Research Method

The research method for design of educational social media as collaborative learning in post-pandemic is a combination of literature study and field studies. Both methods are used in collecting data and information about social media and existing policies in the post-pandemic education sector. Literature studies are used to get up information on government policies in the post-pandemic education sector through government regulations, general guidelines and technical guidelines. Information related to post-pandemic education regulations is used as the basis for designing an educational communication system that will be implemented in social media applications. The suitability between the results of the application design and existing regulations is the main point so that the application can be applied and used without violating the rules. The field study is used to review several social media as references such as Twitter which focuses on text, Instagram which focuses on images, TikTok which focuses on video, and Facebook which focuses on community with a combination of text, images, and videos. The field study on social media above produces an overview of how to social media works which is then used for the design of social media focuses in the field of education by combining the two methods used in this research.

### 2.1 Literature Review

Research on education during a pandemic has different outputs. Most research produces recommendations as solutions to existing problems. This research is a form of implementing several recommendations that can maximize teaching and learning activities by using technology to collaborate students and teachers throughout Indonesia to make mutual cooperation in social media-based teaching and learning activities.

The study entitled "Kesiapan Guru dalam Melaksanakan Pembelajaran Daring ditengah Wabah Covid-19" written by Prabowo, Arga Satrio et al in the Jurnal Penelitian Bimbingan dan Konseling Vol 5 of 2021 mention that less than 70% of teachers stated that they were not ready to carry out online learning. Prabowo et al give recommended that educational institutions can prepare teaching resources and facilities to carry out virtual learning. The problem of teacher readiness in facing active online learning is overcome by training for educators by the Ministry of Education and Culture and the Education Office in each region. The research entitled

"Menjadi Guru yang Siap di masa Pandemi Covid-19, Melalui Workshop Penggunaan Edmodo dan Google Classroom pada Pembelajaran Daring" written by Haris Kurniawan, Eva Susanti, and Nurfisi Arriyani in the Jurnal Publikasi Pendidikan Vol. 11 No. 1 of 2021 concluded that the activities in the research were an attempt to provide solutions for schools to prepare teachers to face the adjustment of the learning process during the pandemic. In this study, it is also recommended for teachers to always upgrade their knowledge, both knowledge of curriculum and government policies, as well as upgrade their knowledge of methods, and knowledge in the field of education in the 4.0 era. This shows that equipping teachers with the ability to use Edmodo and Google Classroom has not yet been able to fully cope with online learning activities due to many factors that affect the effectiveness of online teaching and learning activities.

Learning complex educational applications is quite difficult for teachers who are still not habituated to using laptops or smartphones in the teaching process. The many features offered will make the effort to learn these features even more difficult. The research entitled "Plus Minus Penggunaan Aplikasi-Aplikasi Pembelajaran Daring selama Pandemi Covid-19" by Diana Novita and Addiestya Rosa Hutasuhut, State University of Medan mention that complex learning applications such as Rumah Belajar, Meja Kita, Icando, Indonesia X, Google for Education, Microsoft Office 365 (Cloud Computing), Quipper School, Ruang Guru, Sekolahmu, Zenius, and Cisco Webex have large sources so they require a fast internet network and large quota capacity to be able to use the applications above. In addition to internet speed, students must have a laptop or tablet PC so that the material in the application can be seen properly.

Research on the design of educational social media as collaborative learning in post-pandemic is an online learning media innovation with simple, and practical features so that it can be accessed with low connections and can simply be opened with a smartphone like the current social media applications.

### 3. Findings

The Data Center and Information Technology of the Ministry of Education and Culture Republic Indonesia states that collaborative learning in conventional learning activities is only carried out between students or teachers in the same school or in the same class. Post-pandemic conditions require the world of education to invite all teachers and students to be able to share and collaborate in the learning and teaching process so can create good synergies for the growth of education in Indonesia. The collaboration dimension is very large so collaborative learning needs to have boundaries and regulations that are in line with the culture and conditions of education in Indonesia. The collaborative learning points mentioned by Mr. Ade Koesnadar PTP Expert Madya Data Center and Information Technology of the Ministry of Education and Culture are:

1. Students have the opportunity to work together with other students who previously did not know each other,
2. Interaction between students from various regions must be directed and follow the program has been prepared by the teacher,
3. Collaborative learning activities can grow students' motivation and competitive spirit,
4. Students have learning resources from their teachers at school and from other teachers who previously did not know.

The collaborative learning model is used as the basis for developing educational social media designs to suit the purpose of this study. The results of observations on educational references with the concept of collaborative learning are combined with the results of studies on how social media works with the following details:

1. Twitter

Twitter social media focuses on text content or the power of words. Images and videos can be included as posts on Twitter, but the use of words in the form of text is the focus of this social media interface. The simple interface makes it convenient to build chats in the form of text.

2. Instagram

An Instagram user is someone who likes to upload photos for various purposes. Uploaded photos can be seen only by their friends or can also be accessed by anyone who is connected to their account. The focus of Instagram is photos or images so this social media interface is full of images grids uploaded by users. Videos and captions on Instagram tend to be complementary and additional to the content of each account.

### 3. TikTok

TikTok's social media focus on videos. All information in the form of videos can be seen on TikTok. TikTok has rules for video duration and video capacity so that this social media can still be accessed with a fairly low internet connection. When compared to YouTube, TikTok has the advantage of being easy to create content directly using a smartphone as well as a simple and easy-to-learn user interface.

### 4. Facebook

Facebook has community-focused content with a variety of text, images, and videos. The user interface on Facebook has detailed but still looks simple. By displaying content in the form of text, images, and videos, Facebook becomes more informative than other social media.

The results of the analysis above serve as guidelines for designing data requirements and an overview of application interfaces on educational social media as collaborative learning in post-pandemic.

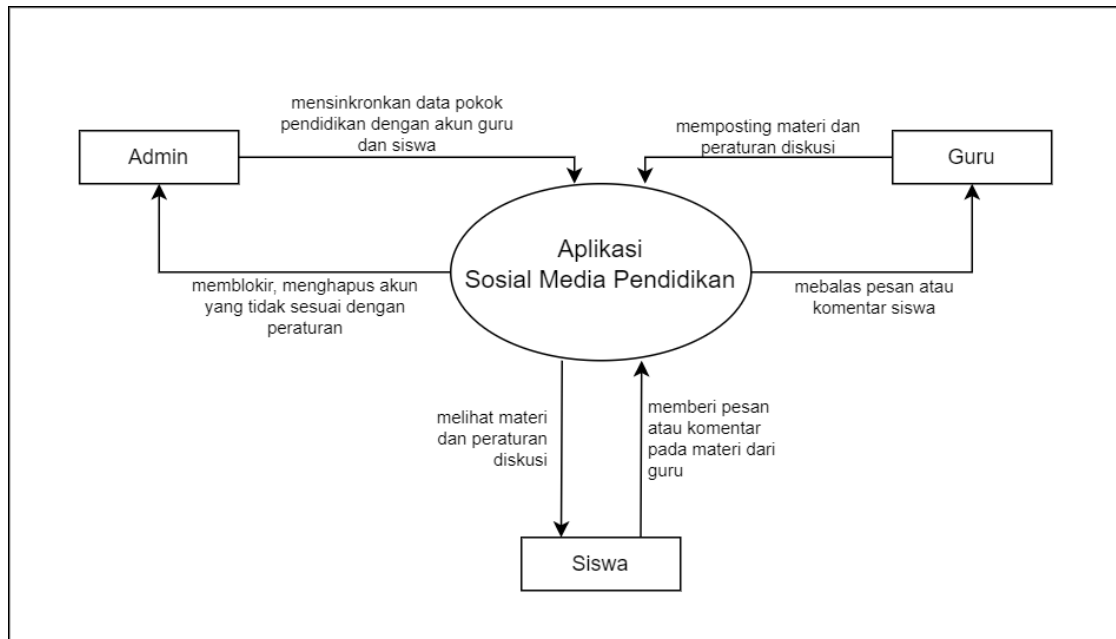
### 3.1 Problem

The problem faced in this research is to formulate the implementation of social media design that focuses on discussing educational content. How to combine government regulations on educational standards in Indonesia with the application of social media as a communication tool with the concept of collaborative learning is the main part that must be solved in this research. By analyzing post-pandemic education policy documents and studying the existing workings of social media, an overview of the design of educational social media as collaborative learning in post-pandemic can be obtained.

### 3.2 Research Implementation

The results of the research design of educational social media as collaborative learning in post-pandemic are DFD (Data Flow Diagrams) and Application Interactive Flows. The two results are educational social media designs with collaborative learning concepts in the early stages to determine data requirements and application interfaces.

The DFD in this study provides an overview of the database required by the application and how relationships from one data to another with user simulations and what they can do. The following is a DFD as an overview of the database, database relations, and interactions between users in the application:



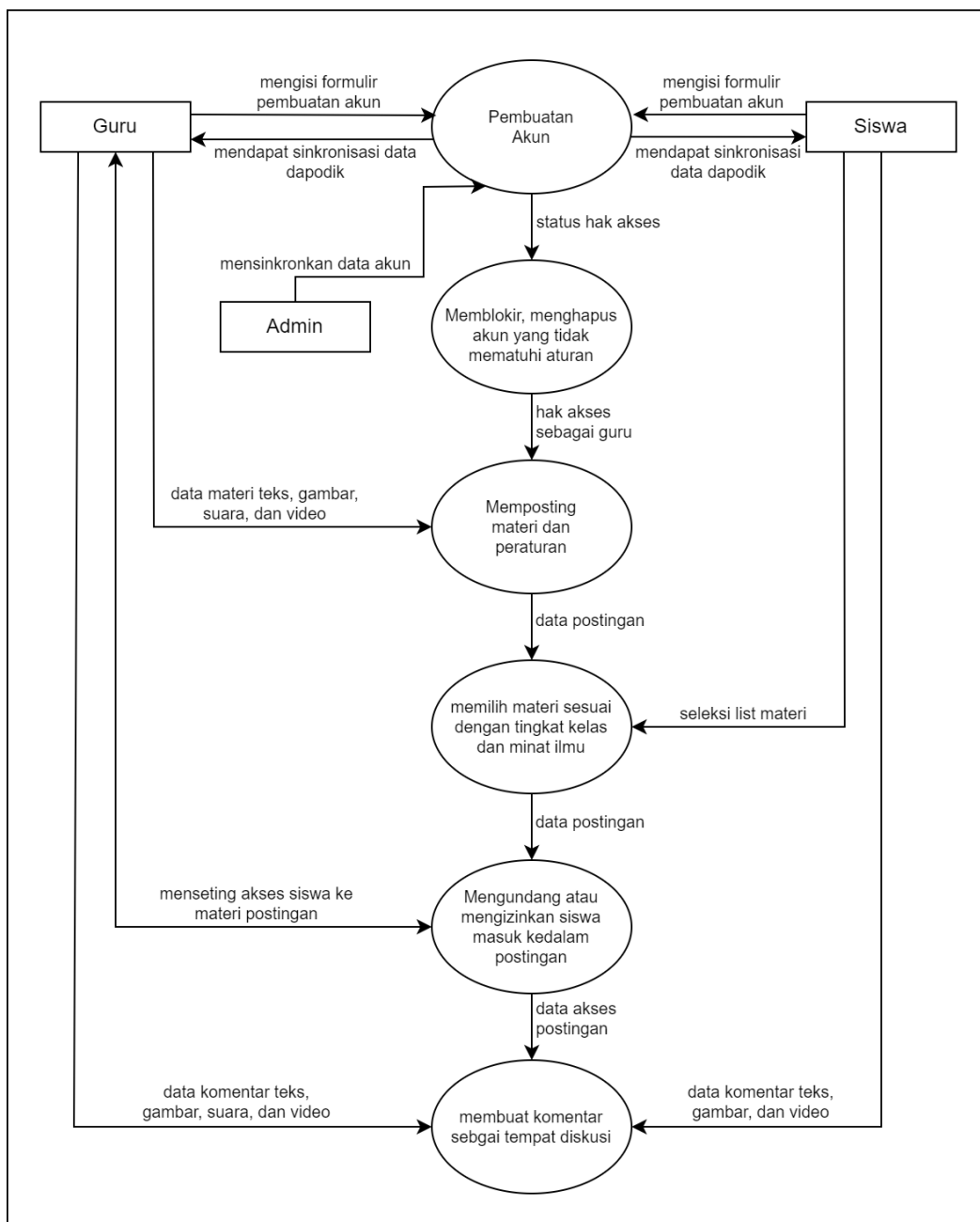
Picture 1. DFD Level 1 Educational Social Media as Collaborative Learning Application

Data synchronization with basic education data from the Ministry of Education and Culture is used to select educational social media users on the application so that it is known that the teacher account is a user registered as a teacher on the basic education data and student accounts are users who are registered as students on basic data. The status of teachers and students will remain clear on this educational social media network.

Admin is the highest user who can block and delete accounts for those who violate the rules. Regulations in educational social media are general rules that are also found on other social media, the user should not post pornographic elements, things containing elements of ethnicity, religion, race, and intergroup, and also not being allowed to comment with swear words or another disrespectful language. While technical regulations on educational social media are attached to the system flow so that control can be carried out by the system on the application.

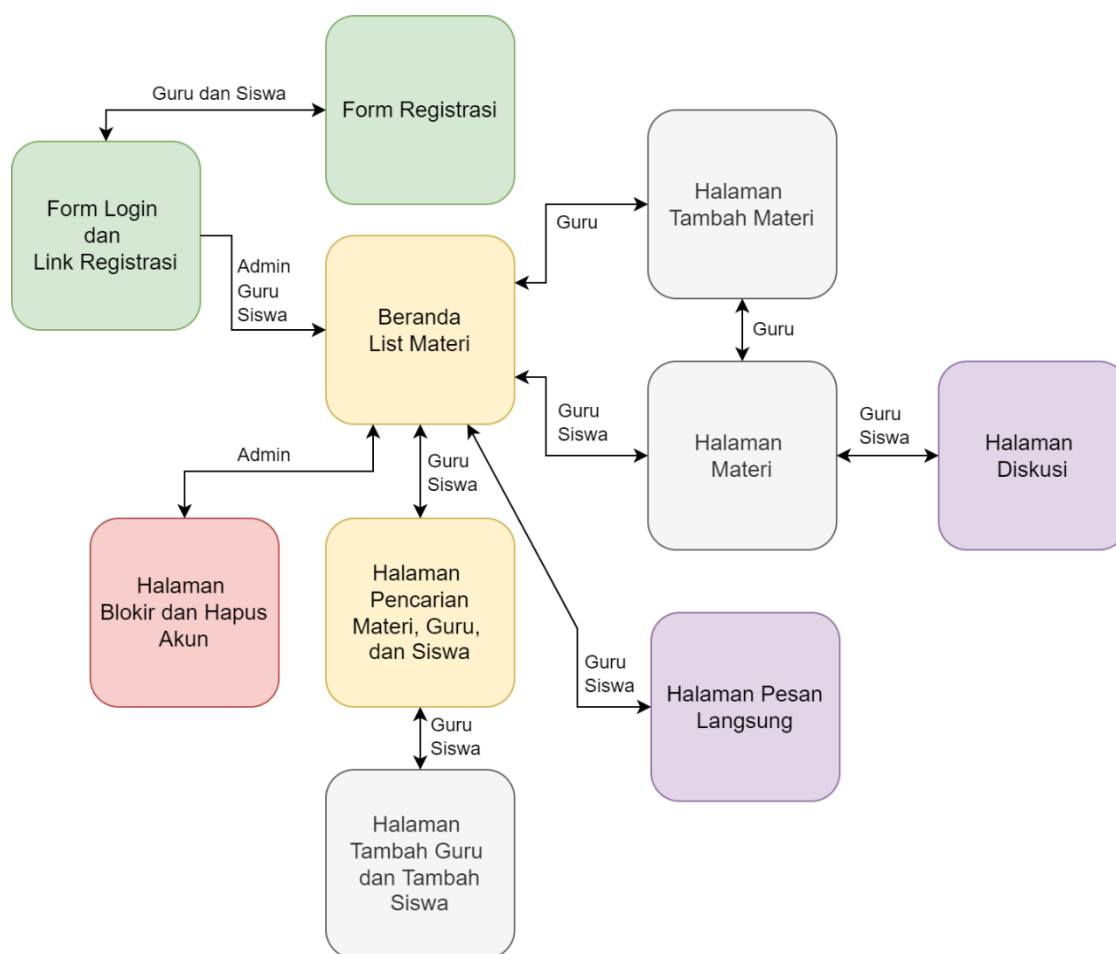
The teacher has access rights to create materials, invite and allow students to join in the discussion of the material. Teachers can also collaborate with other teachers to handle a discussion forum starting from making materials, determining student groups, accompanying discussions, and assessing the results of groups of students/individuals.

Students can view all materials posted by all teachers at all levels. However, to enter comments on the material, students must first ask permission from the teacher who makes the material so that each student remains under the teacher's supervision even though they do not know each other directly. Students can meet and collaborate with other students who do not know each other on the material of their choice due to common interests. Students who have entered the material can ask questions to the teacher and other fellow students who are in the material. Discussions between students can also be carried out with a hierarchical comment system that can classify types of comments based on the discussion.



Picture 2. DFD Level 2 Educational Social Media as Collaborative Learning Application

The interactive flow developed from the DFD. The results of the interactive flow design provide an overview of the application interface so that the application prototype can preview before being implemented into the user interface. The following is an interactive flow in the design of educational social media as collaborative learning are:



Picture 3. Design of Interactive Flow on Educational Social Media as Collaborative Learning Application

The interactive flow above can be used as a guide in making the user interface and implemented in the form of a prototype. The required page types and system user access rights can be seen in the interactive flow design above. Further research development can be carried out by making prototypes up to the realization of educational social media applications as collaborative learning in post-pandemic so that it can be used by all teachers and students in Indonesia with the concept of complementing each other to create positive synergies for our education.

#### 4. Conclusion

The conclusion in this study is the result on design of educational social media as collaborative learning in post-pandemic to the stage of making data flow diagrams and application interactive flows. The combination of literature on government policies and regulations on the concept of education in Indonesia with field studies on how social media works creates adjustments to educational rules and social media work steps that are in line with post-pandemic educational conditions. The simple features and user interface make the application easy to learn and does not require high internet speed and it is enough to use a smartphone to access the application.

#### References

- [1] Astuti, Aprilia D., Prestiadi, Dedi. (2020). *Efektivitas Penggunaan Media Belajar Dengan Sistem Daring ditengah Pandemi Covid-19*. Prospek Pendidikan Nasional Pasca Pandemi Covid-19, 129-135.
- [2] Kurniawan, Haris., Susanti, Eva., & Arriyani, Nurfisi. (2021). Menjadi Guru yang Siap di masa Pandemi Covid-19, Melalui Workshop Penggunaan Edmodo dan Google Classroom pada Pembelajaran Daring. *Jurnal Publikasi Pendidikan, Vol.11 (1)*, 63-67.
- [3] Muhammad, Hamid. (2020). Menyiapkan Pembelajaran di Masa Pandemi: Tantangan dan Peluang. Kementerian Pendidikan dan Kebudayaan.
- [4] Novita, Diana., Hutasuhut, Addiestya R. (2020). *Plus Minus Penggunaan Aplikasi-Aplikasi Pembelajaran Daring selama Pandemi Covid-19*. Web-Seminar Nasional, 1-11.
- [5] Prabowo, Arga Satrio, dkk. (2021). Kesiapan Guru dalam Melaksanakan Pembelajaran Daring ditengah Wabah Covid-19. *Jurnal Penelitian Bimbingan dan Konseling, Vol 5 (2)*, 9-12.
- [6] Wilson, Agus. (2020). Penerapan Metode Pembelajaran Daring (Online) melalui Aplikasi Berbasis Android saat Pandemi Global. *Susunan Artikel Pendidikan, Vol.5*, 66-72.