

Designing a content setting application on youtube in learning batik in a vocational school

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Abstract. YouTube is a giant repository providing the hugest information in videos compared to other social media. Its characteristics which are entertainment, multimedia, and content are learning resources with a lot of potentials. This study tried to design an application which could filter content on YouTube with a certain parameter, particularly in relation to learning. The application was made using Application Programming Interface (API). Through the application, users could select specific videos analyzed by the system based on the highest rate in accordance with the keywords. The results describe that the application run well. It had been proven that the application could filter the search of Batik Pantai Utara which covered the history and philosophical meanings of Batik Cirebon, Indramayu, and Paoman. To test the application, a manual check by searching certain keywords on YouTube was done and it showed the same results. The application, despite its simplicity, could support vocational high school students to get accurate and specific information about batik. In addition, the application was also proven to be user-friendly.

1. Introduction

The existence of digital platform in learning is inevitable. One of the most reliable platforms as a learning resources in YouTube [1], as it has a tool providing plenty of information in videos which enables people to upload as many videos as possible [2][3]. This condition makes YouTube a giant repository [4] which can be used as a source of information for learning [5]. Meanwhile, video-based learning is able to develop a cross curricular competencies learning model [6].

Learning through YouTube, like any other media, has both advantages and disadvantages. Some of the advantages is that it enriches students' knowledge in a manageable way [7], facilitates deep leaning and gives easy access [4], and appears to be entertaining and attractive [8]. YouTube is such a great medium since it presents web-based video sharing in animation and songs [2], provides real life observation learning experiences [9], and has a platform promoting effective learning outcome development and optimum learning processes. In addition, it also has such disadvantages as irregularity, inaccuracy, misleading, and bias [4].

Those drawbacks of YouTube need to be taken care of if YouTube is chosen to be a learning resource so that it can be effective and efficient. There are several studies selecting a tool filtering video contents in accordance with learning needs. One of which is using a physical characteristic emphasizing subject-related aspect [3]. Another approach is a novel method which is used to manage learning through setting micro learning video classification. This approach uses video transcription extracts using novel speech-



to-text system and digs out cognitive computing to describe features from other videos [7]. The use of YouTube is an adaptation of technology; therefore, one of the analytical approaches is Technology Acceptance Model (TAM). This technique is used to measure the quality of content, accuracy, and appropriateness [1].

A variety of tools and approaches have been used to analyze, choose, and select the learning contents in the forms of YouTube videos are in a complex way. This study is then trying to design a content filter YouTube video application to help vocational high school students in learning, particularly in the philosophy of Batik.

2. Method

The role of video filtering application in learning Batik in vocational high schools in described in Figure 1.

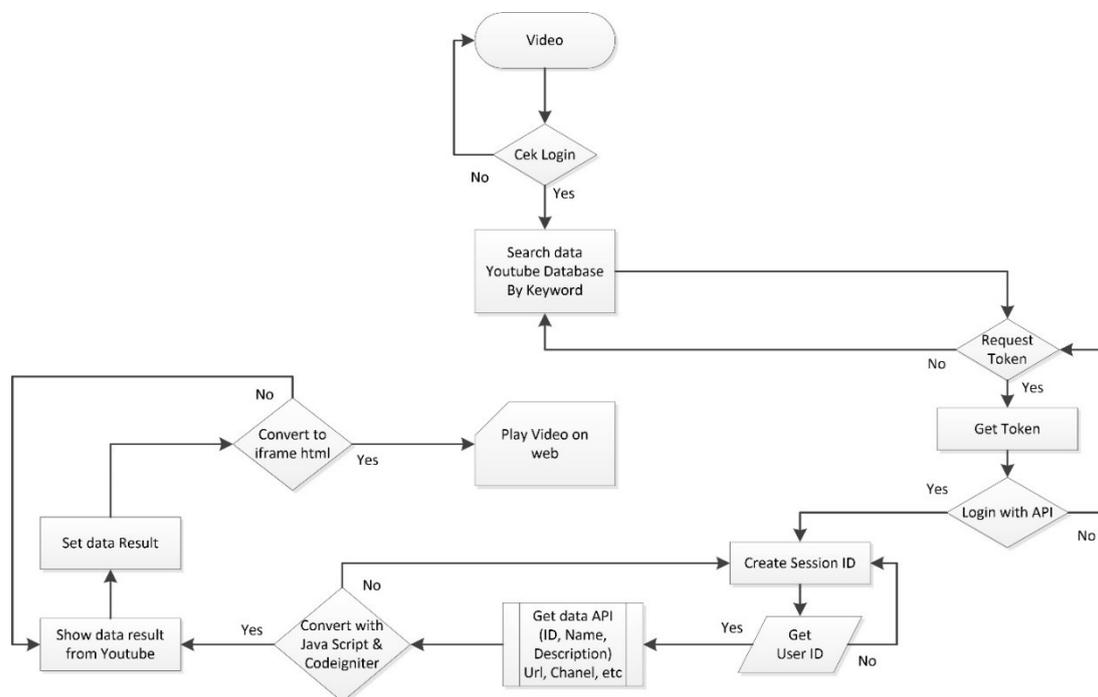


Figure 1. Application Logic Flowchart

Based on Figure 1, it can be explained that the logic development of the application is as follows.

- Before accessing the feature, users should login using their registered accounts. Thus, they have to register before they are able to login.
- The video feature on Digi Learnik application will give valid data according to the users' needs. In this case, users can have videos analysed by system. The analysis is conducted through the number of viewers and likes, Batik video makers, and location and contents. The application also gives specific videos categorizing data based on the history of batik, technology of batik, philosophy of batik, and the art of batik. The process is done through data from YouTube synchronized with the application.

Below are the steps of data synchronization using YouTube [10]:

- Request Token
In this step, application developers request data token to API which has been provided by YouTube prior credential authority in accordance with the project and application made.
- Get Token
After requesting a token, API from YouTube will give data generated by YouTube API.

c. Login With API

The token acquired is then used to login to YouTube API.

d. Create Session ID

When the login is successful, the next step is session ID. It is used to collect data from YouTube API.

e. Get User ID

After session ID is made, user ID will be obtained. This is also used to get data from YouTube API.

f. Get Data API youtube

Using a User ID, data of YouTube API (both complete data and custom data) according to necessary parameter will be retrieved.

The data of YouTube API are analyzed using Javascript and Framework Codeigniter. The data collected, which are converted into json can be used and displayed in the web page. For a user-friendly video display, the web page is combined with CSS.

3. Results and Discussion

This study is to design an application functioning as a learning tool to filter contents from YouTube in learning batik in vocational high schools. This video-monitoring application is a part of Digital Learning Batik Ikonik (Digi Learnik) development which is a web-based application presenting data from different resources so that it can be used as a learning medium in schools. The data presented are those related to batik. This application works to display videos retrieved from www.youtube.com in accordance with the parameter needed by the application. With this application, students will have merely videos relevant to their needs.

In the video-monitoring web page, videos to play will be shown in a list based on parameter as a result from system data analysis. For instance, when a history button is chosen, a collection of the history of batik Cirebon, batik Indramayu, and batik Paoman will be displayed based on the most viewers and the most credible creators [11]. Users can choose to watch videos from the list displayed by the system based on their needs as shown by Figure 2.

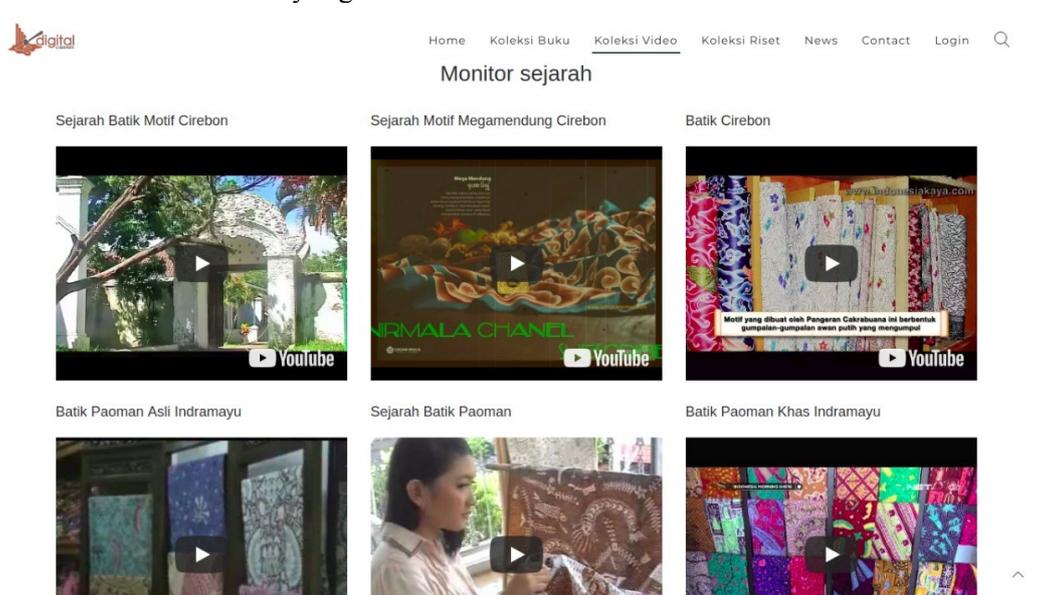


Figure 2. List of videos displayed by the system

Figure 2 shows the video application made for learning batik in vocational high schools. The browser used for trial is Google Chrome. In Figure 2, the history of batik button displays six videos with highest rate and best keyword-fitting. The videos are the history and pattern of batik Cirebon, batik

Megamendung, batik Indramayu, and batik Paoman. The filtering method refers to three principles comprising the appearance frequency, content appropriateness, and keyword similarity [7].

The application created will enable students to have batik learning content based on their needs. The content presentation by the application has been filtered based on the theme and sub-theme criteria. Students can select the content related to the theme of learning batik which is north beach batik consisting of batik Cirebon, Paoman, and Indramayu. Each area is analyzed based on its batik philosophy and history. This type of process, the searching based on keywords, refers to relevant videos and thematic analysis [5].

The next step, as shown by Figure 3, is when the students can operate the player after choosing one of the videos. The player can be zoomed out into full-screen mode and is equipped with other buttons. A video entitled “Sejarah motif batik Cirebon” (the history of batik Cirebon pattern) is the video with the highest accuracy according to the system. This procedure is also well-known as search strategy where the searching matches the purpose of the learning process [12].

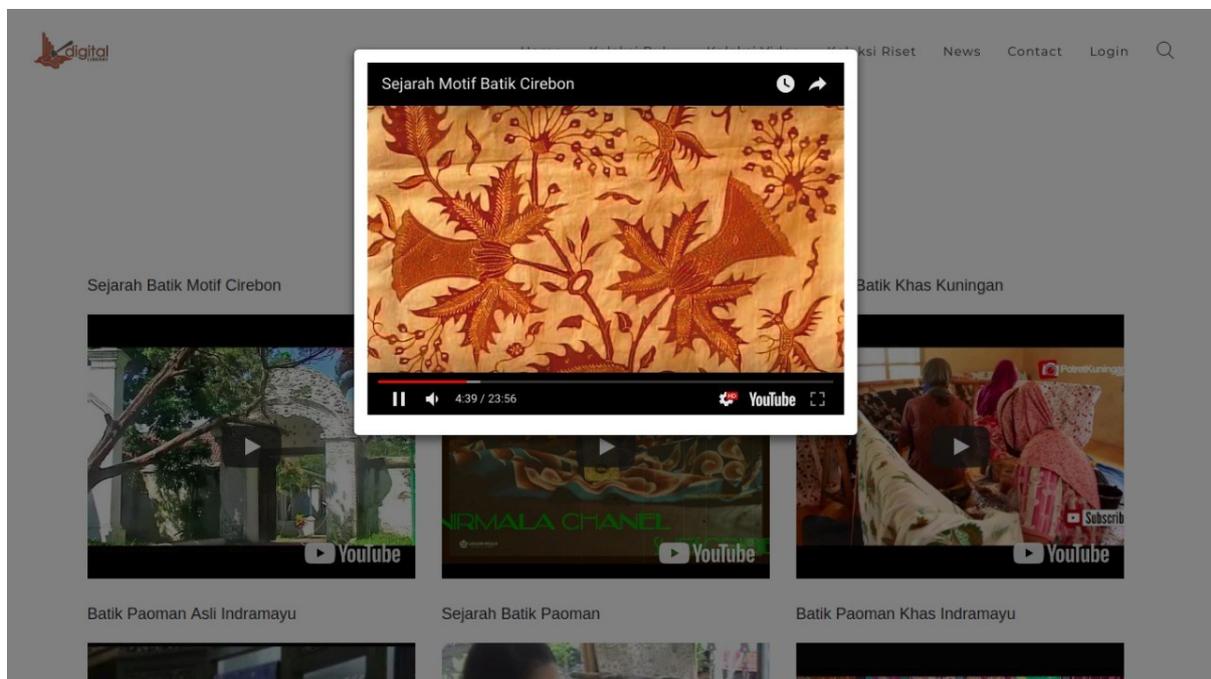


Figure 3. One of the video on the history of batik Cirebon when played

To prove whether the application runs well, a manual check is also carried out as shown in Figure 4.

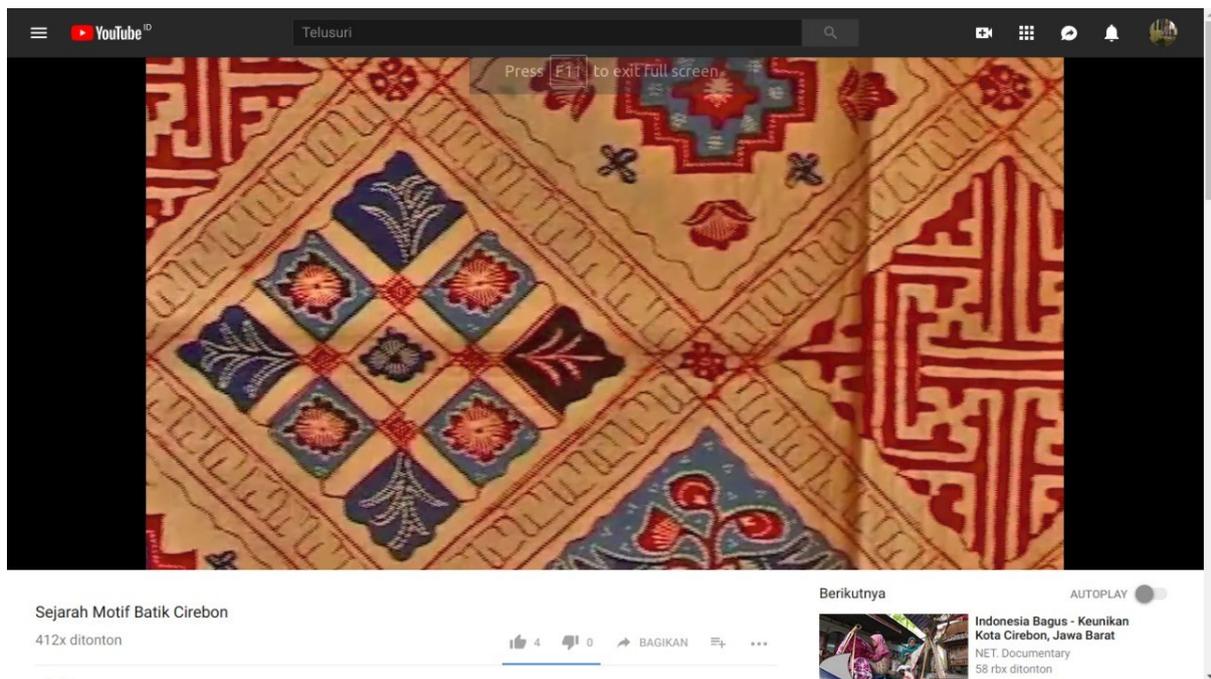


Figure 4. Manual searching through youtube.com

Figure 4 shows the application testing through a comparison with manual search using YouTube. The results show the same parameter with that determined by the application. In other words, the application runs well. It is also safe to say that the application can be used to encourage students' innovation and creativity in learning batik [13].

4. Conclusion

Utilizing YouTube for learning has a lot of potentials to enrich students' knowledge upon certain topics significantly as it is a platform with entertainment and multimedia so that learning can be fun. However, the contents in YouTube, which are various and heterogeneous need a filtering tool so that students can access videos with the highest rate and in accordance with their needs. The application designed in this study has a feature to filter contents on YouTube with desired parameters which will display videos with the highest rate and match with the keywords. The application is used for learning a variety of batik containing the history and philosophy of batik Cirebon, Indramayu, and Paoman. The application is also manually checked by comparison with manual search on YouTube and the results show the same videos.

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