

# Online Learning Information System for High School Students

**Hari Supriyadi<sup>1</sup>**

Universitas Widyatama  
[hari.supriadi@widyatama.ac.id](mailto:hari.supriadi@widyatama.ac.id)

**Parlindungan<sup>3</sup>**

Universitas Widyatama  
[parlindungan.mt@widyatama.ac.id](mailto:parlindungan.mt@widyatama.ac.id)

**Endang Amalia<sup>5</sup>**

Universitas Widyatama  
[endang.amalia@widyatama.ac.id](mailto:endang.amalia@widyatama.ac.id)

**M.Rozahi Istambul<sup>2</sup>**

Universitas Widyatama  
[rozahi.istambul@widyatama.ac.id](mailto:rozahi.istambul@widyatama.ac.id)

**Dani Hamdani<sup>4</sup>**

Universitas Widyatama  
[dani.hamdani@widyatama.ac.id](mailto:dani.hamdani@widyatama.ac.id)

**M.Benny Chaniago<sup>6</sup>**

Universitas Widyatama  
[benny.chaniago@widyatama.ac.id](mailto:benny.chaniago@widyatama.ac.id)

## Abstract

This research aims to create a learning information system in the form of an online-based learning application for high school students (SMA) as an alternative media in helping the learning process carried out by teachers and students. Designing online-based learning applications, the framework used as a method for learning applications as an alternative media for teachers in carrying out the teaching and learning process is the prototyping model, the stages for the prototyping model can be described as follows: the analysis process while listening to what customers ask, designing and evaluation of the design of feedback or feedback from customers. The findings of this research can provide convenience for the teaching and learning process, especially for teachers and students, teachers can present learning forms or models easily with adjustable learning and teaching time management, students can receive various models and varied forms of learning from teachers that allow the learning process to be carried out. teaching and learning will be more conducive and not boring.. Business processes carried out at Kartika Chandra High School (SMA) Bandung. Further observations at Kartika Chandra High School are needed as the first step in conducting analysis to obtain information related to the teacher, student database and learning process activities.

in short, online-based learning applications are needed for teachers and students at Kartika Chandra High School as an alternative media in the teaching and learning process that can provide convenience in presenting various forms of learning materials and make it easier for students to receive interactive learning materials and make the teaching and learning process easier. become more conducive. This research is expected to provide various patterns that are considered different as alternative media for the online teaching and learning process, which aims to provide various facilities for teachers and students in making classroom learning more conducive.

## Keywords

Application Design, Data Center (Database).

**To cite this article:** Supriyadi, H; Istambul, M, R.; Parlindungan, Hamdani, D, Amalia-E, and Chaniago, M, B. (2021) Online Learning Information System for High School Students. *Review of International Geographical Education (RIGEO)*, 11(6), 291-297. doi: 10.48047/rigeo.11.06.34

**Submitted:** 10-10-2020 • **Revised:** 14-12-2020 • **Accepted:** 05-02-2021

## Introduction

The Survey on Use and Utilization of Information and The Survey on Use and Utilization of Information and Communication Technology (ICT) in the education sector was conducted on 4,014 schools spread across 34 provinces. Based on education level, SD and equivalent are 64.55 percent, SMP and equivalent are 19.22 percent and SMA and equivalent are 16.23 percent (bps.go.id, 2018). Based on data from the Ministry of Education and Culture of the Republic of Indonesia, the number of senior high schools (SMA) that have computer laboratories and the use of the internet has only reached over 29.7 percent and the use of Information and Communication Technology, also known as ICT in the learning process at the school level upper secondary is still not optimal (jendela.kemdikbud.go.id, 2020). One of the factors that have not optimally utilized ICT in high schools is the implementation of inappropriate learning strategies that involve elements of information technology. Currently information technology is only used as a data provider, not for media that can be used as learning support, this can happen because there is no comprehensive understanding related to the use and optimization of information technology in relation to education, so far many teachers and educators only use technology information is limited to data providers, such as searching for learning materials, forms of material and practice questions in learning and so on, of course this is a big loss for schools that have received benefits from the government in infrastructure procurement in the form of providing information technology and internet facilities to support the learning process. teaching, besides that there are several other factors including:

- a. Kartika Chandra High School in this case does not yet have a learning media (Blended Learning) that can be used by students in the learning process.
- b. The use of ICT in high school is not yet optimal in the form of an inappropriate implementation of learning strategies that involve elements of information technology.
- c. Information technology is only used as a data provider, not for media that can be used to support learning

Based on the description above, Kartika Chandra High School should be able to optimize information technology and internet facilities, one of which is by designing an online-based learning information system that can provide various conveniences in carrying out the teaching and learning process, varied learning materials that can be provided to make the class more conducive and not boring.

## Literature Review

### The Literature Application

An application is a set of program instructions on a computer. This, if executed by the user, can perform or provide various functions and can provide various information needed by the user according to the requested instructions. (Saputri & Lee, 2021).

### Database

a collection of data that interacts with each other and has a role in building a distributed system on a DBMS which is a set of logical data that is interconnected and distributed in a physical model on a computer network system and does not have dependence on current and future applications or programs. A file is a collection of data created as a collection of connected or interconnected applications. (Baechtel, Monson, Forsen, Budowle, & Kearney, 1991).

### Prototype

The stages in the prototype model development process refer to the reference Roger S Kuiper (1981), as follows

### Listening to Customer Requests

In this section, the collection of the system is carried out by listening to various constraints from customers, in building a system that is in accordance with customer requests and needs, we can find out in advance and do an analysis of the system that is running then it will be known the various obstacles faced.

### Prototype Design and Manufacturing

In this section, the process of designing or making prototypes is carried out, this design is made according to the requests and needs of customers which are determined from the previous process in the form of customer or user constraints.

### Testing

In this section, the prototype that has been designed is carried out in a testing process, then an evaluation process is carried out from various points of view so that it is known what are the shortcomings of the system needed by the user or customer. From the shortcomings that have been received from users or users, prototype development is carried out again as a step in improving the system to be made.

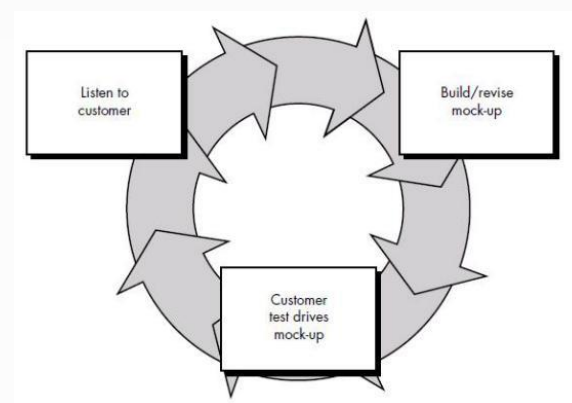


Fig. 1. Prototype Model

## Method

### Listening to Customers Request (System Analysis)

The obstacle faced by Kartika Chandra High School currently does not have an online learning system as an alternative media in the teaching and learning process. This is one of the obstacles in building more conducive classroom conditions because the models and forms of teaching and learning are too monotonous.

### Design

#### Use Case Diagram

Use case diagrams are functional requirements that can be expressed in the form of images from various user points of view or users who come from the system. In addition, use cases can provide solutions related to questions related to various interactions of actors with the system

and are described in the form of actions that will be carried out by the system..

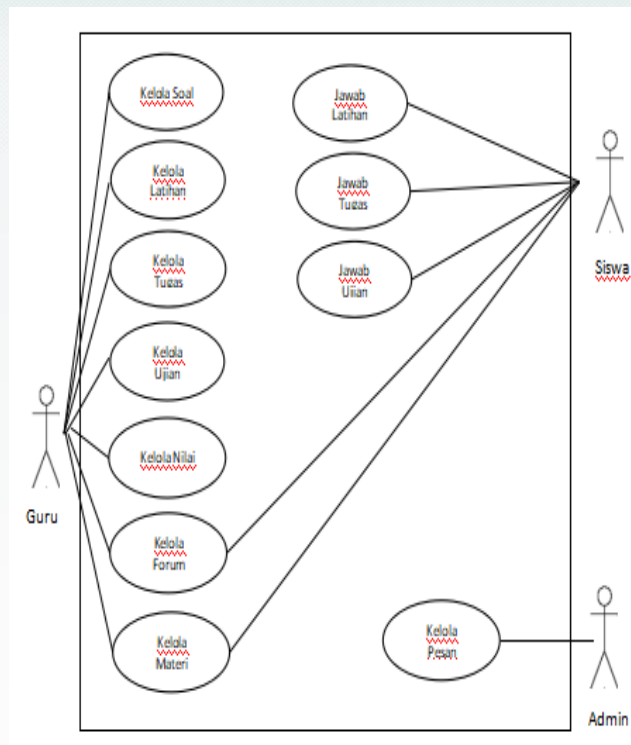


Fig. 2. Use Case Diagram

**Class Diagram**

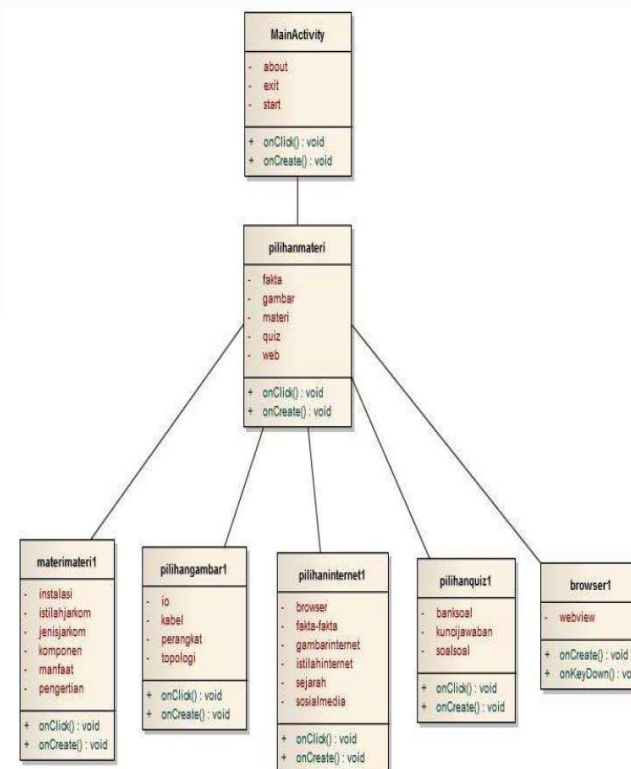


Fig. 3. Class Diagram

## Prototype Testing Final Stage.

The system that has been made is not immediately implemented, but this requires a stage in the form of testing the software that will be implemented. This has the aim of minimizing the application that will be implemented in the field, the error rate and system failure is very minimal, testing this application using the black box testing method with a top-down testing strategy.

## User Interface

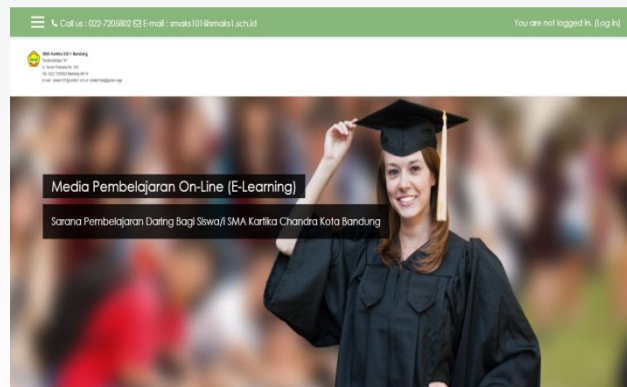


Fig. 4. Main Menu Interface



Fig. 5. Main Menu Interface

The interface on the Main Menu can provide information related to online learning applications at Kartika Chandra High School.

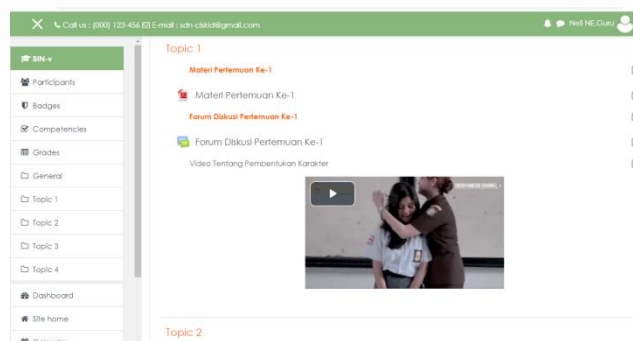
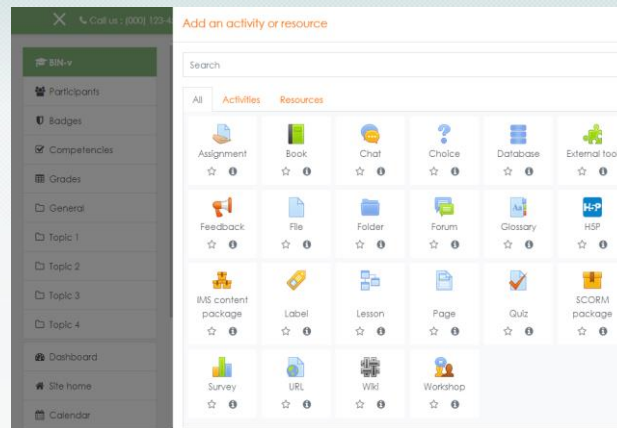
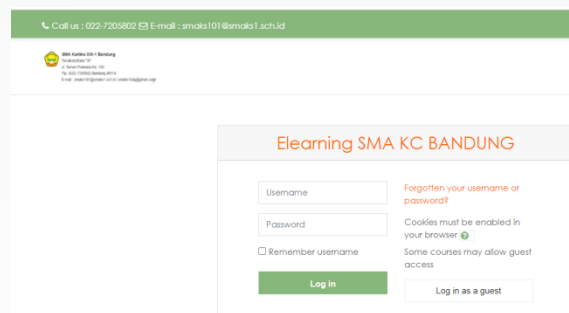


Fig. 6. Menu Input Learning Materials

For Kartika Chandra High School Students Interface



**Fig. 7.** Online Learning Activity Menu Interface



**Fig. 8.** Admin Login Interface

The admin menu interface can be used as a menu for data management related to teaching and learning process data, such as: managing teacher data, managing student data, managing teacher and student attendance, managing the number of meetings and other master data needed during the teaching and learning process.

## Finding And Discussion

Within a period of 1 month, there are learning transactions in online learning applications, from the analysis for 1 month of the learning process carried out, it can be seen that several factors are of concern, including:

- Teachers can provide and present learning materials using media in the form of modules, videos and interactive presentation files that can make it easier for students to receive material.
- Students can obtain material from the teacher with various media models in the form of modules, videos and other learning materials.
- The level of student attendance in the learning and teaching process is high.
- The level of student activity in discussing and asking questions in the e-learning system class is high
- The learning process can be done anytime, anywhere without being limited by distance and time.

**Table 1:**  
Sample 1

Criteria	Category	Number	Percentage
Visitors (Gender)	Male	42	42%
	Female	58	58%
Visitors (Age Group)	25-29	15	15%
	30-39	25	25%
	40-49	35	35%
	>50	25	25%
Media Information	Manual	15	15%
	Web Based	85	85%

From the results of the analysis for 1 month, it can be seen that several factors can be noted as factors that can provide an improvement process for various factors in the teaching and learning process, so far students are constrained when participating in the teaching and learning process, this is because the model or form of learning that is carried out only transferring conventional forms in the classroom to virtual forms by using various virtual face-to-face media, students will experience a saturation with the process of learning models like this due to the use of learning models that are not varied. Likewise with teachers, the main obstacles faced in the teaching and learning process include the model of presenting material information which is only limited to the text model, has not been able to combine audio visuals and animation, so that the existence of alternative learning media can make one reference in improving the learning process.

## Conclusion

Based on the results of the descriptions that have been described in the previous discussion chapters, a conclusion can be drawn with the design of an online-based learning information system at Kartika Chandra High School, including:

1. Development of an Online Learning Information System for Elementary School Students, as a tool or media that can be used to support the teaching and learning process, can provide convenience for teachers and students in carrying out the teaching and learning process because it involves elements of text, audio and video.
2. Counseling on the use of Online Learning Applications is very helpful in the process of understanding the meaning of online learning as well as understanding the technicalities of using applications.
3. For teachers, this application provides very good benefits, teachers can improvise learning models and strategies that are supported by online learning applications.

## References

- Baechtel, F., Monson, K. L., Forsen, G., Budowle, B., & Kearney, J. (1991). Tracking the violent criminal offender through DNA typing profiles—a national database system concept DNA Fingerprinting: Approaches and Applications (pp. 356-360): Springer. doi:[https://doi.org/10.1007/978-3-0348-7312-3\\_26](https://doi.org/10.1007/978-3-0348-7312-3_26)
- Kuiper, N. A. (1981). Convergent evidence for the self as a prototype: The "inverted-U RT effect" for self and other judgments. *Personality and Social Psychology Bulletin*, 7(3), 438-443. doi:<https://doi.org/10.1177/014616728173012>
- Saputri, T. R. D., & Lee, S.-W. (2021). Integrated framework for incorporating sustainability design in software engineering life-cycle: An empirical study. *Information and Software Technology*, 129, 106407. doi:<https://doi.org/10.1016/j.infsof.2020.106407>