

Chapter 5

Conclusion, Implications, and Recommendations

5.1 Conclusion

An OpenCourseWare system has been successfully developed using web technologies. Based on the results and discussions of this study it can be concluded as follows:

- a. OpenCourseWare e-learning information has been developed that is hosted online and can be accessed via a personal computer, laptop and other small devices with the Internet connection or can be used offline in localhost. The development has been done by analysing requirements, designing database and user interface, implementing design into a real product, and then performing system functionality, usability, and responsive testing to see the quality of the system.
- b. The test result of OpenCourseWare e-learning information system from functionality, usability and responsive or capability aspect indicates a quality information system which can be used by the Higher Education Institute to maintain online course materials and effective communication between teachers and students. The test result of functionality and responsive both aspect is 1 which indicates “Good” by ISO 9126 standard. The usability test results show that the value of alpha Cronbach, 0.909 is an “Excellent” category. The four aspects of the usability test the value of usefulness is 85%, the value of the ease of use is 83%, the value of the easement of learning is 52% and the value of satisfaction is 77%.
- c. The e-learning information system uses responsive design and all the content of the system is responsive to small device beside a large device. So a student can access the system from a mobile phone device besides a large screen device.
- d. The e-learning information system has two interfaces which are student interface and administrator interface. Administrator Interface designed for administrator and teacher but the student interface only for the student where

students can get access by their NIM and password. Using this system student and teacher communicate with each other, they are able to create a chat topic and then can start the chat. Chat can be identified by topic name. The system is used photo of teacher and students so it is easy for an identified teacher or student by their photo beside their name. The e-learning information system is a Single Page Application which really gives its user a better experience of browsing. The system store video to YouTube so that the system does not require a lot of storage, which reduces the hosting cost and besides the user access the videos from the system are able to access them on YouTube. Search Engine helps the user to find a course easily.

5.2 Implications

Researchers who are interested in conducting further research, further research should be more in-depth and comprehensive, more specifically the developing course materials for this system. Students can get extra knowledge of modern web technologies and they will get used to some new English vocabularies by using this system. A complete user guide needs to develop and teachers and students need to be trained before they use this system.

5.3 Recommendations

- a. E-learning information system use bootstrap3, this study recommends using the latest version of the bootstrap so that the user interface would be more interactive. Form layout of this system is two columns. Creating a course on this system is one by one it means the user can create one course at a time, which is no problem but uploading course materials or videos is a problem. The researcher recommends using batch creating facilities for the user which means a user can upload or create more than one item at a time.
- b. Researcher suggests future developer to use the YouTube API on this system to integrate YouTube video so that users can upload lecture videos to

YouTube using this system. It will save users time and they will feel more comfortable.

- c. A chrome extension can be developed so that students and teacher can log in using their login details and they will be able to chat using this chrome extension. The system users do not need to visit the original web portal. Using this chrome extension students also able to see if there are any chat notifications.
- d. This study only performs functionality, usability, and responsive test. More test can be done in order to certify the quality of the e-learning system.
- e. The current e-learning system does not support any language, the text is used in this are fixed text. The language support tool can be helpful to use this in other languages who does not understand English properly.