MULTIMEDIA PROJECT ON WEBSITE DEVELOPMENT USING DREAMWEAVER AND PUBLISH DOMAIN AMONG ENGINEERING STUDENTS

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Abstract

This paper presents a study on multimedia project development on website development using Dreamweaver software that published on free domain among engineering students in a campus university. The objective of this study is to analyse the level of skills and how capable are students able to develop their own website with e-learning activity and guide using Adobe Dreamweaver. E-Learning is one technique that suite in today's present students who exposed to technology and online communication that can help them in learning activities. Website development is an important application today where data are kept and published on the World Wide Web and viewed by users. A multimedia project that comprised of elements text, animation, image, audio, and video is well designed on website pages. This study motivates in research to identify engineering students' skills and their independence level in designing a website using Adobe software. Three engineering students group from computer, system and communication engineering, Faculty of Electrical Engineering are chosen which covered 33, 24 and 32 students and the task was given in a group. Students are given rubrics on the website development that related to Electrical Engineering Company. Blended Learning activities that guide them such as basic html programming and using Dreamweaver template is upload online to I-learn system. Students are to follow a set of derived rules and criteria tracked by some rubrics for their score marks. Website development characteristic involved planning, design, estimate cost and published on a free domain in the methodology. The result presents a good result for computer, system and communications students groups which score A grades respectively 82%, 100%, and 92%. An analysis shows that students are good on e-learning activity on presenting and development of the multimedia on the website projects. Most students can develop websites and follow the derived rules and rubrics. Only a few do not meet the rubrics. The result shows all the engineering students group present good website development which is interesting and innovative. This presents students are independent and able to learn with the guidance of video and internet online knowledge who capable to develop their own website within 2 month frame time.

Keywords: e-Learning; Multimedia Project; Website development; Dreamweaver; Online; Internet knowledge, Education, Engineering students.

1 INTRODUCTION

Multimedia System and Development is a field concerned with the computer-controlled that integration of text, graphics, animation, audio, and video. There also other connected medias called hypertext or hypermedia where every type of information can be represented, stored, transmitted and processed digitally. Teaching multimedia subject need some innovative and creative skills, where sometime student's soft skills are identified throughout the project's development. Today's teaching and learning space have become

easier with the existing internet platform that provides lecturers and students online and faster information. Internet and webpage today has given an opportunity for students to build up, experienced and enhanced their skills, especially in computer and engineering knowledge either by the help of lecturers of through student's e-learning activities. The extension of technology gadgets like smartphone, I-pad, and notebook are taken as their daily communications tools. On the other hands, facilities at faculty areas have benefited them with covered and surround with wireless fidelity (Wi-Fi) and internet communications. Thus, the issue of fewer facilities for self-learning through e-learning activity is not a problem. Skills and knowledge with the developed facilities with internet technology are matters (Allen, 2016). Students learning approach is important so that the use of technology gadget help them to gather more knowledge, encourage, skills desired for persistence and success in online engineering and computing courses rather than just socialize through the internet (Levy & Ramim, 2017). This research is a further research that has been done among electrical engineering which analyses their skill in developing a website through internet knowledge (M. Kassim, Kamal, Sani, & Johari, 2015). The result from the paper presented that most students using a free domain which is lack of design, but students can learn the first techniques by using free developed website. Recent research analysis has been done on website development using Dreamweaver. The results of the study showed the development of the website-based on social studies learning resource. The obtained mean scores show that the website-based learning resource for the sub-theme is appropriate and can be used as a learning resource (Pamudo, 2017).

Another research presents Design and Implementation of an interactive website for the curriculum system where an e-curriculum is designed. E-curriculum is an important educational system that benefits the world of e-learning and gives people who cannot follow the traditional curriculum and total dependence on electronic curricula. In addition, it remains interactive with the development of educational technology and its use for self-development of the person, because it is available to the user at anytime and anywhere. This project allows the provision of curricula for all students to help them read and download any systematic book for any stage of the study, from the primary to the postgraduate level, thus saving time, effort and research. The PHP, CSS, and HTML languages were used to build this site for the purpose of providing an integrated and efficient system (Maeedi, Ahmad, & Al-Azawi). Research finding shows that the use to determine students' engagement in learning. It helped them to support and foster students use of deep learning approach and improves their self-regulation in learning (Shahri, Rahman, & Hussain, 2014). E-learning is one of the blended learning styles in today's university campus. E-learning has become an increasingly popular form and is particularly suitable to the process of transitioning towards e-learning from traditional forms of learning and teaching (Hoic-Bozic, Mornar, & Boticki, 2009). The study analyzed the use of the blended e-learning model which is based on a mixture of collaborative learning, problem-based learning (PBL) and independent learning, in a course "Teaching Methods in Information Science," given at the University of Rijeka, Rijeka, Croatia. The studied shows that students were satisfied with the pedagogical approach and their academic achievements were also better than expected. Time to time has presented that e-learning need the latest technology development. Some e-learning has developed software based applications where websites can be implemented by inserting front-end information. The software itself will automatically develop the standard cording which is learned from the design software applications. Dreamweaver is one of those applications that are easy and efficient to use when this software offers not only to design with advanced level users but also for beginners (Mauricio, Cagayan, Serrano, & Balahadia, 2017). The other benefit is it could create consistent-looking web pages because it includes templates for a website to assist in the design process. Next, managing and updating the websites can be done effectively because the designers can make changes to the design simply by editing the templates files. The Dreamweaver is a customize software where users can customize the look of the software to match their requirements. Moreover, it offers simplicity through CSS features. Thus, teaching multimedia subject need student skills especially with the help internet knowledge and blended and e-learning activities

This paper presents a study on multimedia project development on website development using Dreamweaver software that published on free domain among engineering students in a campus university. The objective of this study is to analyse the level of skills and how capable are students able to develop their own website with e-learning activity and guide using Adobe Dreamweaver. Three engineering students group from computer, system and communication engineering, Faculty of Electrical Engineering are studied. Students are given rubrics on the website development that related to Electrical Engineering Company. Blended and e-Learning activities that guide them on given project like basic html programming and Dreamweaver software. This study is significant in evaluation engineering student's skills with self-educated through e-learning and identified their talent and soft skills in innovative and creative design website pages.

2   LITERATURE REVIEW

2.1   HTML and Website Development

A project in Multimedia System and Applications subject to design website is proposed to help engineering students, especially in the higher semester to enhance their computer and self-learning skills. It also helps students to view, read, open learning and download important information's and programs online. Basic web development needs programming skills. Programming languages used in designing websites are HTML, CSS, and PHP. A website is defined as a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least on a web server or a location connected to the internet that maintains one or more web pages. Creating web pages need some features, skills, innovative and creative design in presenting a good website that attracts viewers on the internet. Many websites are designed to exposed data and information's online world wide web so that viewers can easily access and get the information. Many websites are design such as to design and integrated with hardware systems (M Kassim, Ismail, & Yahaya, 2011), monitoring system (M Kassim et al., 2011; Ya'acob, Zainuddin, Abidin, Yusof, & Idris, 2016), course teaching (Yusoff et al., 2016) and many more. Thus, assist the student in developing website has taken into the multimedia course as to enhance their skills in HTML and designing skills. Students are exposed to design their own concern website but related to their field of studies. Having an own website is inviting potential customers into business for e-commerce. Business needs a website such as communicates with prospects and customers expand their reach. Web-based communication and email communication are cost-effective and time-saving devices. The use of website gathers quick feedback such as the use of forms, email and social media like Facebook and Twitter to allow your clients to communicate with you within the design website itself.

HTML is a simple document format is required by the HTTP protocol for presenting text and graphics in a website that uses tags to perform those functions. One of the techniques in website creations is started with basic Hypertext Markup Language called HTML (Harris, 2017). This project is an HTML-based interactive learning guide for the channel strip of an analog audio console. A very important skill for students studying audio production, recording, and engineering is to understand the signal flow of an audio console. Much of learning the entire console understands the function and signal flow of the mono channel strip. The channel strip is the first signal input of the console and handles many of the essential functions of signal processing while recording and mixing. The purpose of this project is to demonstrate how HTML, CSS, and JavaScript can effectively be used to design functional interactive learning guides that can be used to supplement textbooks used in audio production classes and act as reference material for students enrolled in those classes. One recent review presents how a student can learn the basics of the system databases using (W3school CSS) which was built as intelligent tutoring educational system by using the authoring tool called (ITSB) (Alawar & Naser, 2017). The learning material contains CSS and HTML. We divided the material in a group of lessons for novice learner which combines a relational system and lessons in the process of learning. The student can learn using an example of CSS, and types of CSS color. Furthermore, the intelligent tutoring system supports not only lessons; but exercises of different difficulty levels for each lesson. When a student finishes successfully the first difficulty level in a lesson, the student is allowed to move to the next difficulty level of the exercises of the lesson. Some other things that can be added to create a website are audio, animation, and video which related in multimedia design concept. As for the animation, the HTML code written to insert the animation into a website is depending on the graphics format that includes inserting the Flash Animation or the GIF89a Animation whereas for the audio and video can be done by inserting the name of the file into the HTML coding.

2.2   Used of Dreamweaver Application

Adobe Dreamweaver is used by web designers and webmaster cause the software to assist to create engaging and dynamic websites. It is one of the best website development programs available in the market. Some of the reasons are easier that can simply toggle between the many sites being worked on. Dreamweaver also known for its excellent CSS features. This is just one of the many advantages of the program, as it simplifies coding processes. The built-in pop-up menus creation in Adobe Dreamweaver makes it super easy to create professional-looking web pages with navigation links. The forms can be easily set to be sent to any email addresses. It also an inclusion of Server Side Include buttons. Unlike other website building software, this feature is readily available for use and there are plenty of options to select from. The last benefits of using Adobe Dreamweaver are the inclusion of many template files. This makes designing the website easy for beginners, yet the program can also handle a more sophisticated design due to its flexibility.

A research presents Web-based Examination System (WES) was, therefore, born out of the will to stymie the

problems plaguing the conventional (paper-based) examination system by providing a campus-wide service for e-assessment devoid of irregularities and generally fair to examinees and equally enhances instant feedback. This system developed using a combination of CSS, HTML, PHP SQL MySQL, and Dreamweaver is capable of reducing the proportion of workload on examination, grading and reviewing on the part of examiners. (Abass, Olajide, & Samuel, 2017). Review on how good in designing a website also is studied where Dreamweaver is taken as one software that has been used. a study is to examine the characteristics of a web-based integrated material planning and control system for construction project delivery. The study used case diagrams and an MVC model in designing the platform for the web-based system. The study revealed that using a web-based system can have the characteristics of ensuring good inventory, good retrieval system, notifications, and prompting system and a third party viewing for good oversight of construction projects. The study recommended the more innovative use of the internet for solving many challenges confronting the construction industry. (Afolabi, Fagbenle, & Mosaku, 2017). A study reports the experiences of semi-professional developers regarding the challenges, tools, and processes within the domain of web application development. The paper summarizes the main problems in web development, characterizes the habits of programmers and concludes with for improvements to web technologies and tools. The report is based on two independent sources which are a survey of 31 web developers and an in-depth interview study with 10 participants (Rode, Rosson, & Pérez-Quiñones, 2005).

2.3 The important of Website Development

Different kinds of websites have different purposes depending on who the intended audience is. Some websites are geared toward selling products and other websites are geared toward providing practical information, while others are merely for entertainment. Some of the important purposed of website are Informative , Entertainment websites, E-Commerce Websites (Alam, Bakar, Ismail, & Ahsan, 2008; Saleh, 2016), Service-Based Business Website (Ismail, Rahman, Ismail, Daud, & Khidzir, 2017), Blogs, Internet of Things (IoT) analytics system (Jaafar, Kassim, Haroswati, & Yahya, 2016; Rahman, Aziz, Kassim, & Yusof, 2017), Social Media Websites or promotions website (Noman, Koo, & Tee, 2017). Some related e-commerce studied to reveal the awareness of ergonomics as part of Internet-based marketing strategy in the industry. Based on Actor-Network Theory (ANT), this study believes that internet marketing is an object that links buyer and seller. An empirical study of previous practices has failed to indicate a common use of ergonomics term in this research area of marketing strategy. Most of the marketing strategy literature in the furniture industry has focused more on aesthetic than ergonomics issues. Therefore, this study utilized qualitative research to analyze the use of ergonomics term in the websites for marketing strategy.

3 METHODOLOGY

3.1 Students Group and Time Frame

Figure 1 shows the research flow on evaluations of student's skills in website development project.
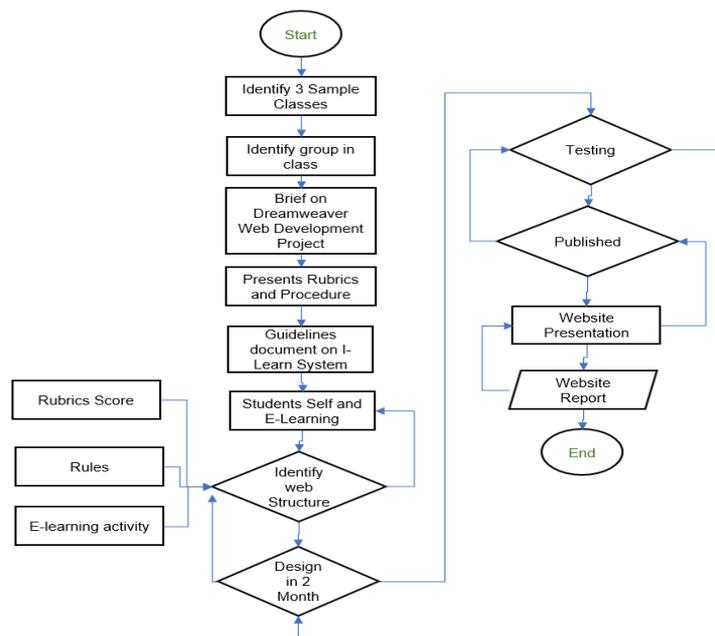

Figure 1. Research Flow

Students are briefed on the design method to start in website development. Blended and e-Learning guidance in documents from a campus university system are uploaded. This guided them on the multimedia project on the development of the website through an online system. This task can measure how capable and do students' ability to use their skills on self-learning to develop their own website. Thus, research on student's skills is to be measured and identified whether they are well capable enough and experiences on self-learning website development. In this study, three classes from computer, system and computer engineering from Multimedia Systems and Applications course are taken as sample classes in 2016. They only advised explaining the key features through self-learning website development and how to go about in starting to develop a website. Others are to be done by the students themselves. Total students involved are 89 students were 33 from the computer, 24 from system and 32 from communications engineering degree program. This project is a group project for two (2) to four (4) students in a group. After divided into groups, computer, system, and communications engineering classes respectively identified 11, 8 and 11 groups for each course in sampling and evaluations of the website development project in the multimedia course

3.2   Website Development and Presentation

Briefing on the starting of the website development was done for all groups. First, students are advised to follow the design rubrics score as in table I that to be analyzed for the website development. Project submission time is given 2 months from the started projects understanding, learning structure and development phase for the students discussed with their members in a group. Each group leader is identified and planning on the hardware, software, cost, manage time, project schedule in the Gantt chart and organizational chart must be prepared by all groups.

3.2.1 Manage Rubrics Score

Three (3) main rubrics score are designed which is based on design websites, website presentations and reports on the website development. Each mark is 10 marks for presentations and report that included designing rubrics in the next section. Each group must present their design website from their published free domain. A report in IEEE reports explaining detail designing their website is proposed to be submitted during the presentations day.

3.2.2 Design Rubrics Score

Eight (8) rubrics score is identified on designing the website and each presented 10 maximum marks. Total marks are 80 marks for design and of 100 marks are given for full score which totals with presentations and report marks.

Table I: Rubrics Score: Design Website Development

	Score	Full Marks
1.	Introduction to the website with good publishes information.	10
2.	Type of application used and Installation guide using Dreamweaver	10
3.	A budget of Website Development on Server, Hardware, Software, Service and online hosting.	10
4.	Five Menu on website	10
5.	Interactive with added all multimedia elements such as clear text, images, animation, music, and video.	10
6.	Website Theme related to Engineering company	10
7.	A website is linkable to hypertext and hypermedia with good website structured design.	10
8.	URL of the website that published on the free domain	10
9.	Website Presentations	10
10.	Website Report	10
	Total Marks	100

3.2   Website development applications

Adobe Dreamweaver is taken as rubrics as application's design used to develop the website. Adobe Dreamweaver is an application that a website can be done a lot easier. It will produce different view, consistency looking, manage and updating website effectively. Dreamweaver is easy and efficiency of uses. This software has not only been designed with advanced level users in mind but also for beginners. A simple and complex website can be designed using a point and click method. This software also easy to upload using FTP. It comes with built-in FTP features, so it is possible to upload files directly to your website.

Besides, this software is customizable software. Users of Dreamweaver can customize the look of the software to match their requirements.

3.3   Internet Guidelines

Students are advised to address or search some online internet knowledge on how to develop a website. Table II presents some listed and Uniform Resource Locator (URL) or World Wide Web (WWW) references for the website development. Table II shows the top ten of best free website hosting builders online. Overview of each website company hosting are remarks and scored on top builders are presented (M. Kassim et al., 2015). Maximum builder score is ten. Students also may refer to others internet sources in helping them to develop their own website. They also may refer to books but today's, soft-books are available online.

Table II: Reference to Online Internet Knowledge

Web Application	Online URL
HTML Coding	http://www.w3schools.com
XML community forums	www.xml.org and www.xml.com
Joomla	http://joomladirect.com/joomla-tutorials/
Free Web Hosting	http://www.top10bestwebsitebuilders.com
Dreamweaver	https://helpx.adobe.com/dreamweaver/how-to/first-website-part1.html

4   ANALYSIS AND RESULT

Analysis and results present the total score for all groups that met the set rubrics in designing their website. Total scores on website design, group presentations, and website report are analyzed, and the graph is plotted to view the difference for all groups. Comparison of computer, system, and communications engineering students are analyzed based on their skills on website development projects.

4.1   Students Achievement

Table III presents the data for the three main rubrics score marks and grades for computer engineering students. It is identified 9 out of 11 groups scored grades A which shows a good skill that computer engineering presents. High scores show for website presentations and reports. This shows 82% of students have good skills in designing and creative developed websites using Dreamweaver applications by e-learning and self-learning activities on the given project. Figure 2 shows the plotted graph of the scores which presents 1 group score full marks, two groups score more than 70 marks, 5 groups score more than 60 marks. There are two groups score lower than 60 marks but still, this shows a good skill they have in HTML and designing website added with good presentation and writing reports skill in furnishing the project.

Table III. Score Marks and Grades for Computer Engineering Students

Group Name	Website	Presentation	Report	Total Marks	Grades
G1	64	9.3	10	83.3	A
G2	60.8	9.0	10	79.8	A
G3	80	9.5	9	98.5	A+
G4	60.8	9.0	10	79.8	A
G5	76.8	9.7	10	96.5	A+
G6	64	9.3	10	83.3	A
G7	76.8	9.7	10	96.5	A+
G8	60.8	9.0	10	79.8	A
G9	76.8	9.7	10	96.5	A+
G10	52.8	9.0	8	69.8	B+
G11	48	7.7	9	64.7	B+

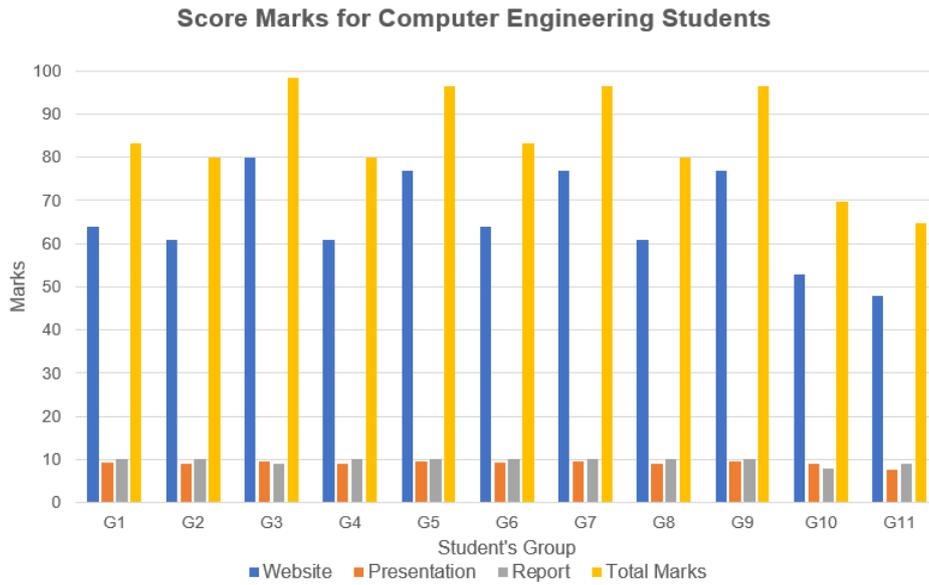**Score Marks for Computer Engineering Students**

Figure 2. Graph Score Marks for computer Engineering Students

Table IV presents the data for the three main rubrics score marks and grades for system engineering students where only 8 groups in this class. It is identified all groups scored grades A which shows a good skill that system engineering presented. Compared to computer students, system students lack some writing skills where there is a lower score at 7 points but high scores on designing website. This shows 100% of students have good skills in designing and creative developed websites using Dreamweaver applications by e-learning and self-learning activities on the given project. Figure 3 shows the plotted graph of the scores which presents 2 groups score full marks, one group score more than 70 marks and 5 groups score more than 60 marks. This shows a good skill they have in HTML and designing website added with good presentation and writing reports skill in furnishing the project.

Table IV. Score Marks and Grades for System Engineering Students

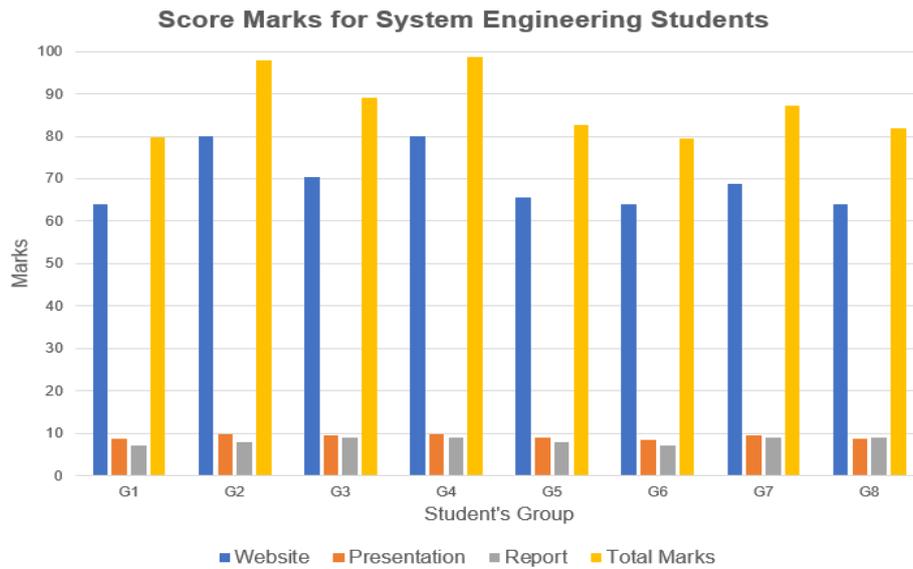| Group Name	Website	Presentation	Report	Total Marks	Grades
G1	64	8.8	7	79.8	A-
G2	80	9.8	8	97.8	A+
G3	70.4	9.6	9	89	A
G4	80	9.8	9	98.8	A+
G5	65.6	9	8	82.6	A
G6	64	8.5	7	79.5	A
G7	68.8	9.4	9	87.2	A
G8	64	8.8	9	81.8	A

Figure 3. Graph Score Marks for System Engineering Students

Table V presents score marks and grades for communications engineering students where 10 out of 11 groups in this class score grades A. This shows a good skill that communication's engineering students presented. Compared to computer and system, communications students present 92% of students have good skills in designing and creative developed websites using Dreamweaver applications by e-learning and self-learning activities on the given project. Figure 4 shows the plotted graph of the scores which presents 1 group score of more than 70, 9 groups score more than 60 marks and only 1 group score 51 marks. This still shows a good skill they have in HTML and designing website added with good presentation and writing reports skill in furnishing the project.

Table V. Score Marks and Grades for Communication Engineering Students

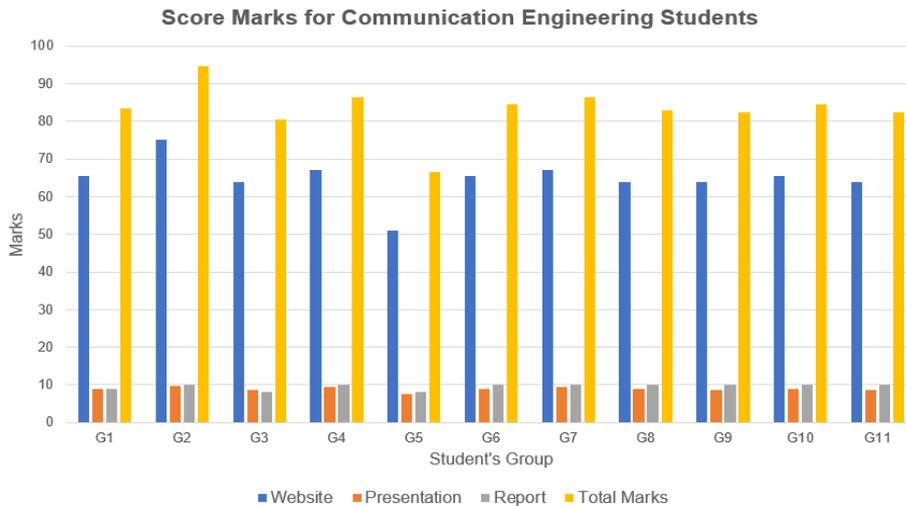| Group Name	Website	Presentation	Report	Total Marks	Grades
G1	65.4	9.0	9	83.4	A
G2	75	9.7	10	94.7	A+
G3	63.8	8.7	8	80.5	A
G4	67	9.3	10	86.3	A
G5	51	7.7	8	66.7	B
G6	65.4	9.0	10	84.4	A
G7	67	9.3	10	86.3	A
G8	63.8	9.0	10	82.8	A
G9	63.8	8.7	10	82.5	A
G10	65.4	9.0	10	84.4	A
G11	63.8	8.7	10	82.5	A

Figure 4. Graph Score Marks for Communication Engineering Students

4.2   A sample of Developed Webpage

Figure 5 shows samples of the students design their home web pages using Dreamweaver. Figure 6 shows a sample of the design website page that has been published on a free domain. The website was published on using a website editor. It's easier compare to any other domain hosting website. The use of multiple media on the website is shown in Figure 7 where image and embed video is programmed and linkable either to YouTube or downloadable video. Figure 8 shows a sample of HTML programming on the information's design for Menu HOME and ABOUT US on the web pages.

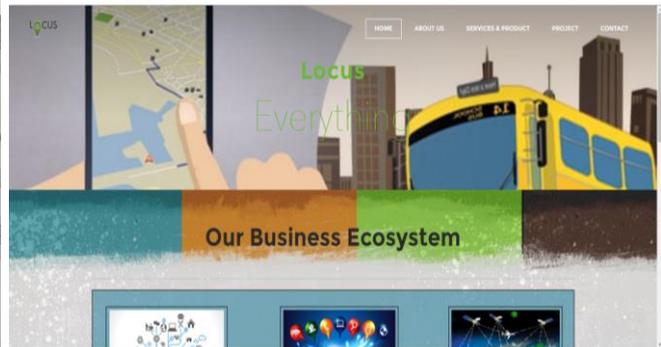Figure 5. Design Using Dreamweaver
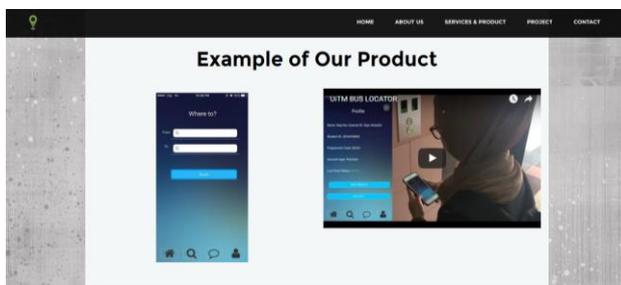

Figure 6. Published in Free Domain

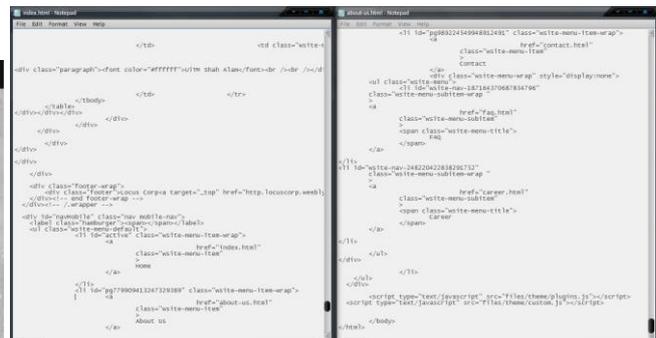Figure 7. Implementation of Media on Website

Figure 8. HTML Coding for Home and About Us Menu

5 CONCLUSIONS

As conclusions, analysis and evaluations have been done on identifying the level of competence of engineering students from computer, system, and computer engineering programs. It has identified that all students are competence in designed the given webpage projects through e-learning and self-learning activity. Students submitted their report and present good website design and able to finish in given time. The good result presents computer, system and communications student's groups scored A grades

respectively 82%, 100%, and 92%. The analysis shows that students are good on e-learning activity on presenting and development of the multimedia on the website projects. Most students can develop websites and followed the derived rules and rubrics. Only a few do not meet the rubrics. Most designed web pages were interesting and innovative. Future research is to analyse the type of design structure used in designing the website and which design technical structure are best published in designing the secured and interactive web pages. Dreamweaver is identified as one of the easiest and best website developer tools to be used by professional, teachers and students who are avoiding HTML coding. There are a lot of features and it's easy for the user to understand HTML code through Dreamweaver. Furthermore, free developer domain also easy to be used for beginner developer and business start-up the likes of WIX, WordPress, and Weebly available in the online market.

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