

EDU MUET LEARNING PORTAL (EMLP)

THE IMPACT OF USER FACTORS ON USER'S  
SATISFACTION OF MUET EDUCATIONAL  
PORTAL

THIRUNAGESWARI

Dissertation submitted as partial fulfillment of the  
requirements for the degree of Master of Science  
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## STUDENT'S DECLARATION

Name : THIRUNAGESWARI D/O VIJA KUMARAN

Matric No : PCOM0089/09

School : SCHOOL OF COMPUTER SCIENCE

Thesis title : THE IMPACT OF USER FACTORS ON USER'S

SATISFACTION OF MUET EDUCATIONAL PORTAL

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Students Signature: .....

Date: 25<sup>th</sup> February 2011

Acknowledgement of receipt by: .....

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# **PORTAL PEMBELAJARAN EDU MUET: KESAN FAKTOR PENGGUNA TERHADAP KEPUASAN PENGGUNA PADA PORTAL PENDIDIKAN MUET**

## **ABSTRAK**

Edu Solution berkeinginan untuk memperkenalkan Portal Pembelajaran Edu MUET bagi mengatasi masalah yang dihadapi oleh pelajar dalam menggunakan portal sedia ada iaitu Portal Pendidikan MUET. Masalah utama yang dihadapi oleh pelajar adalah terhadap rekabentuk portal dan kandungan pembelajaran yang tidak menepati kehendak pelajar. Untuk mengetahui faktor-faktor yang mempengaruhi kepuasan pengguna dalam menggunakan Portal Pendidikan MUET, penyelidikan terhadap portal sedia ada telah dijalankan. Di mana borang soal selidik telah digunakan bagi mendapatkan pandangan daripada pelajar. Daripada data yang dikumpulkan, 'dirasakan manfaat' dan 'dirasakan kemudahan penggunaan' memberikan kesan terhadap kepuasan pelajar terhadap Portal Pendidikan MUET. Disamping itu, 'sistem kebolehsesuaian' memperkuat hubungan di antara 'dirasakan manfaat' dan 'dirasakan kemudahan penggunaan' terhadap kepuasan pengguna dalam menggunakan Portal Pendidikan MUET. Hasil penyelidikan, menunjukkan bagi menambahkan kepuasan pelajar untuk menggunakan Portal Pembelajaran Edu MUET, portal tersebut haruslah direkabentuk menggunakan faktor 'dirasakan manfaat' dan 'dirasakan kemudahan penggunaan'. Edu Solution mengaplikasikan kedua-dua faktor dan sistem kebolehsesuaian untuk merekabentuk Portal Pembelajaran Edu MUET. Untuk merekabentuk portal agar menepati faktor 'dirasakan manfaat',

ciri-ciri yang harus ditepati adalah ketepatan, senang untuk difahami, ringkas dan bermanfaat kepada pengguna. Manakala bagi faktor ‘dirasakan kemudahan penggunaan’, ciri-ciri yang harus digunakan sewaktu merekabentuk Portal Pembelajaran Edu MUET adalah senang untuk dinavigasi, jelas dan cepat. Portal Pendidikan Edu MUET mengandungi kandungan pembelajaran seperti nota, latihan, quiz, tips pembelajaran, contoh soalan dan jawapan berasaskan pada tahap pengetahuan pelajar. Daripada penyelidikan yang dijalankan menunjukkan faktor ‘dirasakan manfaat’ dan ‘dirasakan kemudahan penggunaan’ mengandungi kesan signifikan terhadap kepuasan pelajar dalam menggunakan Portal Pembelajaran MUET. Ini menunjukkan yang perniagaan ini adalah sesuai dan mempunyai potensi pertumbuhan bagi tiga tahun berturut-turut dengan keuntungan yang meningkat daripada 30% kepada 37%.

# **EDU MUET LEARNING PORTAL (EMLP): THE IMPACT OUSER FACTORS ON USER'S SATISFACTION OF MUET EDUCATIONAL PORTAL**

## **ABSTRACT**

Edu Solution intent to introduced Edu MUET Learning Portal (EMLP) in order to overcome the current problems that are being faced by the students on the existing MUET Educational Portal. The main problems faced by the students are on the design of the portal and the learning contents. In order to find out the impact of user factors on user's satisfaction of MUET Educational Portal, a survey has been conducted among the portal users where a questionnaire is used to get user's satisfaction towards the portal. The data collected shows that, perceived usefulness (PEU) and perceived ease of use (PEOU) have impact on the student's satisfaction of MUET Educational Portal. Besides that system adaptability (SA) strengthens the relationship between PEU and PEOU on user's satisfaction of MUET Educational Portal. Based on research result, to make the students satisfied with the portal, the portal must consider PEU and PEOU. Edu Solution will apply perceived usefulness, perceived ease of use and system adaptability in the design of EMLP. In order to design the portal using perceived usefulness factor, the features that have been used to design the portal is accuracy, easy to understand, simple and usefulness. While for perceived ease of use, the features that have been used to design the portal is easy to navigate, clear and quickly. To strengthen the two factors, EMLP is designed with the adaptability features. EMLP consist of notes, exercises, quizzes, past year questions, MUET tips and sample questions

& answers. EMLP will provide learning contents based on the user's knowledge level. From the research conducted, perceived usefulness and ease of use is found to have a significant effect on user's satisfaction of MUET Educational Portal and this is used to design EMLP. This shows that this business is suitable and has a potential growth in the first three years with the net profit increasing from 30% to 37%.

## **SECTION 1.0 EXECUTIVE SUMMARY**

Malaysian University English Test (MUET) is a test on English language skills, largely for university admissions. The test is set and run by the Malaysian Examinations Council (MPM) largely recognized only in Malaysia and Singapore. Most candidates who sit for MUET do so to apply for admissions in public universities and colleges.

Edu MUET Learning Portal (EMLP) is an educational portal developed for STPM students who take MUET. EMLP can behave adaptively to the user although the user has different knowledge level. EMLP is designed with the intention to improve students' learning in MUET, so that they can achieve well in their MUET and to overcome the problems faced by students on the current MUET Educational Portal. EMLP will provide learning content based on the current format of MUET. There are three types of packages offered by Edu Solution to their customers. Package A will consist of notes, exercises, quizzes, past year question papers, MUET tips and MUET speaking test video. Package B consists of notes, exercises and quizzes. Package C consists of notes and exercises. The price for each package is different depends on the items included inside the packages. The price for package A is RM 200 and package B is RM 120. While for package C, it is offered free of charge. Besides the packages, EMLP are also includes features like students' chat room, online dictionary, students' performance tracking, and sample questions & answers.

Edu Solution is a startup company dealing with MUET learning for STPM students. Edu Solution aims to introduce EMLP as the solution to the current situation whereby there is lack of teachers for MUET subject, limited time in the school time-table and expensive MUET tuition fees prevent students to go for tuition. A case study has been conducted among 10 STPM students who are aware of the existing MUET Educational Portal to find out their satisfaction towards the portal. The output of the case study reveals that the existing MUET Educational Portal are lack of exercises, past year question papers, notes, quizzes, MUET speaking test video and MUET tips. The exercises provided inside the portal do not follow the real MUET format and the learning contents are not updated. The students also stated that the portal is not consistent and systematically organized. The portal also does not have user accounts, so the students are not able to save what they have done. Besides, the explanations are not provided for the right answers. The students also stated that the portal lacks of multimedia elements, non-interactive and does not provide different levels of questions to test their ability.

EMLP is an adaptive portal designed to attract students. The term *adaptive* is used to show the fact that the portal can adapt to different ability level in English among students in the process of learning. Therefore, each student will get different input from the portal based on their knowledge level. Students can also get their result on their MUET performance using online or SMS services. The report on the performance will be presented to be viewed by the students.

Edu Solution is a company founded with the intention to improve MUET learning process among STPM students. Edu Solution has an experienced advisor in education and web technology. The target market for Edu Solution is based on the segmentation by age, level of education and Internet users. It is aimed at the age group from 18-19 years old which is, form six students. The target market is people that are resulted from 7% of the total market.

A market research has been conducted to find out the impact of the user factors on user's satisfaction of MUET Educational Portal. The proposed research model applies the theory of planned behavior (TPB) and the original model which was proposed by Tobing, Hamzah & Hanudin (2008), Davis (1992) & Heijden (2004) and Ramayah, Ignatius and Aafaqi (2005) were adopted and modified into the proposed research model. From the result of the data analysis, it was found that perceived usefulness and perceived ease of use (user factors) have positive impact on user's satisfaction of MUET Educational Portal. System adaptability (moderator) strengthened the positive relationships between perceived usefulness and perceived ease of use on user's satisfaction of MUET Educational Portal. From the research that been conducted, it shows that student's are not satisfied in using the existing MUET Educational Portal. This statement is supported with the low mean value on the student's satisfaction towards MUET Educational Portal. This shows that users are not satisfied with the learning content and the design of the portal. In order to overcome the problem on the learning content and design of the portal, those factors which are significant with the user's satisfaction are used

to design the proposed EMLP. Besides that, the adaptability features are also use to design EMLP in order to strengthen the positive impact between the two factors.

Edu Solution will seek RM120, 000 as the pre-seed fund. This includes setting up of the company, purchasing software and hardware needed and for advertising purposes. The 4P (Product, Price, Promotion and Place) concept will be used as the operative concept because the users is the most important factor for Edu Solution to survive. Income earned by Edu Solution for the first year of operation is projected to be RM 425,399. While on the second year of operation, Edu Solution estimates to earn around RM 475,794 and on the third year of operation Edu Solution's expected income is around RM 535,024.

## **SECTION 2.0 INTRODUCTIONS TO THE COMPANY**

### **2.1 Company background**

Edu Solution is founded on 9 July 2010 by Thirunageswari d/o Vija Kumaran, a postgraduate student in MSc IT Technopreneurship in USM, Penang. Edu Solution's intention is to improve the MUET learning process for STPM students. The main aim of Edu Solution is to enable the students to learn MUET by themselves. Edu Solution's business model is a B2C model, where Edu Solution as a company providing MUET learning to the students. Edu Solution chooses this business model because by using this model both parties which are the company and the customers will get the advantages. The main advantage for Edu Solution is that the company could reach the target market with unlimited volume of customers. The advantages for the customers are the convenience features and they can shop at any time of day, from the privacy of their own home.

### **2.2 Business intent**

Edu Solution is a startup company dealing with educational portal. Edu Solution intends to develop an adaptive learning portal for MUET subject. Edu Solution aims to introduce Edu MUET Learning Portal (EMLP) as the solution for the current situation in education whereby there is a lack of teachers for the MUET subject. An article in *Utusan Online* stated that there is a lack of MUET teachers in some schools (Jamilul, 2010). Besides, limited time hinders students to do more exercises during the school hours as stated in the

Malaysian Students Blog (2010). During the MUET learning process in school, the normal method is used to teach MUET is by teaching in the classroom and students are given exercises by the teachers. However, the time for MUET lessons is limited to make the students understand the overall content that is being taught by the teachers. Limited time in schools prevents teachers from giving many exercises to the students. The students need to take tuition or read by themselves. Here is where EMLP is important. Students would be able to learn by themselves. More exercises can be done by accessing the portal.

Other than that, an expensive MUET tuition fee hinders students from going for tuition. Meteor Learning Sdn Bhd is one of the tuition centre which provides MUET tuition. Table 2.1 below shows the fees for MUET tuition per month.

*Table 2.1: MUET tuition fees per month*

<b>Option</b>	<b>Amount Payable</b>
Intensive Course and Exam	RM 240.00
Course Only	RM 190.00

*Source: Meteor.com.my (2006)*

A case study which is an interview, has been conducted in this research to identify the problems faced by the students on the existing MUET Educational Portal. The problems that been indentified are the portal is lack of exercises, past year question papers, notes, quizzes, MUET speaking test video, and MUET tips. Besides, the exercises provided inside the portal do not

follow the real MUET format and there is no explanations provided for the right answers. Moreover, the learning contents are not updated and the portal is not consistent and systematically organized. The portal also does not have user accounts, thus preventing students to save what they have done. Other than that, the portal is lack of multimedia element, not interactive and does not provide different levels of questions to test their ability.

Based on the problems that have been identified, Edu Solution comes out with Edu MUET Learning Portal (EMLP). By accessing EMLP, students are able to learn by themselves and do more exercises before the MUET test. Edu Solution also intends to overcome the problems faced by students on the existing MUET Educational Portal as mention before.

According to Butcher (2002), educational portals did not contain an effective sitemap which weak navigation. The primary weaknesses of navigation arise when sites mess up with too much information on a single screen. There are also some educational portals which has a navigation structure that is difficult to follow. There are many advertisements and information on one site, making it difficult for the browser to view specific navigation pathways (Butcher, 2002). An effective user interfaces in web based learning environments is important, because it determines how easily learners can focus on learning materials without having to make an effort to figure out how to access them (Lohr, 2000).

According to Baba & Kaur (2006) on their review analysis on the existing educational portal, stated that in terms of presentation, it was found that educational portal like Tutor.com and Student.com do not have the

required standard look and feel in their pages design. This makes it difficult to find specific information. Student.com consists of five different groups of navigation menus. This is totally unnecessary for a specialized portal like education portals as it irritates users and makes information look messy. As for content reliability and availability Tutor.com portal has contents that are not always updated. From the research done by Baba & Kaur (2006), there are a few limitations found on the existing education portals in Malaysia. These portals do not have standardized layout and screen design and the online learning materials are not based on suitable learning process.

According to Dekson and Suresh (2010), adaptive system becomes an essential or a requirement in the educational systems of today. Students nowadays do not prefer to listen to lectures the whole day as in the traditional style of teaching. Hence, adaptive learning could be the only solution to the above problem. In the current scenario, researchers take huge efforts to embed adaptive features in the e-learning environments.

From the review analysis done by Butcher (2002), Baba & Kaur (2006) and Dekson & Suresh (2010) on the existing educational portals, they concluded that the educational portals does not contain an effective sitemap and the sites mess up with too much information in a single screen. Besides, weak navigation make it difficult to follow, difficult for the browser to view specific navigation pathways and difficult to find specific information. Moreover different groups of navigation menus irritate users and make information look messy. The researcher also stated that the learning contents are not updated and not based on suitable learning processes. Other than that,

education portal is designed with non-standardized layout and screen design and the researcher stated that, students nowadays does not prefer to listen to lecture the whole day as in the traditional style of learning process.

### **2.3 Growth Strategies**

Edu Solutions would follow the freemium model as its growth strategy. The word freemium is made up from the words free and premium. It describes a business model where the company gives a core product away for free and sells premium products. Combined of free and premium users, hence its name, freemium is about delivering one good at no charge in unlimited quantities while charging for other goods (Anderson, 2008). Edu Solution will adopt this model as its growth strategy, where package A and B will be the premium products and package C will be the core product which will be offer free. Package C is offer free in order to attract the students to use Package A and B. This is because once students use Package C which only offer notes and exercises will make the students feel that the need more utilities, so the students need to purchase Package A and B which offer more learning material and have more utilities compared to Package C which is not sufficient. Figure 2.1 shows the diagram for the freemium business model.

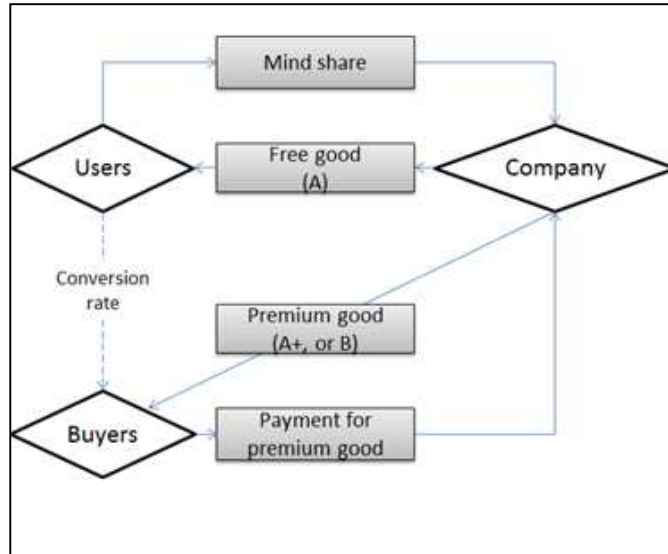


Figure 2.1: Freemium Business Model (Anderson, 2008)

Edu Solution will develop EMLP that will be able to change its behavior to adapt to the user. Adaptivity is the unique value that Edu Solution will offer. Furthermore, students can learn MUET by themselves and get the feedback of their performance from the portal.

### 2.3.1 Financial Strategies

Edu Solution will apply Technopreneurs Pre-Seed Fund grants from Multimedia Development Corporation (MDEC) and SME Bank as its financial sourcing. Edu Solution is hopeful to receive pre-seed funding from MDEC of RM 40,000 and a bank loan of RM 80,000. Expenses include allowances of RM800 for each staff except for the Managing Director and Accounting & Financial Director which is RM500 for the first year of operation. Other than that, there will also be expenses for Research and Development (R&D), Sales & Marketing and General & Administrative expenses.

In the first two years, Edu Solution will focus on introducing and marketing Edu MUET Learning Portal (EMLP). The revenue is from three types of transaction (online transaction, SMS services, and banner advertisement). In the third year of operation, Edu Solution will have more sales than the first two years. The aim of Edu Solution in the third year is to make EMLP familiar among the STPM students. Target annual sales volume and profit year by year for Edu Solution are as shown in Table 2.2.

*Table 2.2: Target annual sales volume and profit (RM)*

	<b>2011</b>	<b>2012</b>	<b>2013</b>
Sales (local)	527,187	578,837	638,970
Sales (Exports)	0	0	0
Total Sales	527,187	578,837	638,970
Net Profit (loss) before tax	<b>425,399</b>	<b>475,794</b>	<b>535,024</b>

Table 2.3 shows projected breakdown of total sales for three years of operation. For the first year of operation, Edu Solution estimates to get 7% of the target market which is around 3259 as target customers to use the services offered by Edu Solution. For the second year, Edu Solution targets to attract 3585 customers which is an increase of 10% based on first year's target customer that is 3259. Charges will be the same as the first year. For the third year, Edu Solution targets to attract 3944 customers which is an increase of 10% based on second year's target customer that is 3259. The total sale for Edu Solution for the first year of operation is projected to be RM 450,647 while on the second year is RM 496,227. On the third year of operation, sales projection is RM 547,080.

Table 2.3: Projected Breakdown of Sales for 3 years of operations

<b>Item</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Online Transaction (Package Subscriptions)	445,260	489,950	539,150
SMS Services	1,397	1,537	1,690
Banner Advertisement	3,990	4,740	6,240
<b>Total</b>	<b>450,647</b>	<b>496,227</b>	<b>547,080</b>

### 2.3.2 Technology and Product Development Strategies

The technologies that will be used by Edu Solution to develop Edu MUET Learning Portal (EMLP) are as shown in Table 2.4 below. The software that will be used for the programming language is Hypertext Preprocessor Programming Language (PHP). PHP programming language will be used to develop EMLP. PHP has been chosen as the desired language because PHP has been widely used and suites especially for web development. The software that will be used for the database is MySQL. The software will be used to store all the students' information, learning contents and their performance. MySQL database has been identified to be the web based system database. MySQL database has become the world's most popular open source database due to its consistency, fast performance, high reliability and easy to use. For the interface design, Edu Solution will use Macromedia Dreamweaver MX and Adobe Photoshop 7.0. Macromedia Dreamweaver MX will be used to design the interface for EMLP. Adobe Photoshop software is used to create sophisticated image. The software that will be used for the animation is Swish v2.0. Swish is easy to be used and produces complex animation with text,

images, graphics and sound. Swish animation can be incorporated into any web page or imported into flash. The software that will be used for web browser is Internet Explorer 6.0. This tool is used at clients' side to view the web page. The software that will be used for the operating system is MS Windows XP. MS Window is the common and mostly used operating system.

*Table 2.4: Technology being used by Edu Solutions*

<b>Applications</b>	<b>Software used</b>
Programming Language	Hypertext Preprocessor Programming Language (PHP)
Database	MySQL
Interface Design	Macromedia Dreamweaver MX
Design	Adobe Photoshop 7.0
Animation	Swish v2.0
Web browser	Internet Explorer 6.0
Operating system	MS Windows XP

In order to maintain the level of user satisfaction, Edu Solution will adopt the following product development strategies:

- a) Hire more technology experts in Edu Solution to enhance the system development process and get support from experienced advisors in the business and technology field
- b) Collaborate with Ministry of Education to expose the product
- c) Edu MUET Learning Portal (EMLP) will be adapted to new audience
- d) Offer the product in audio CDs and
- e) Edu Solution will continue to improve the product and consider on the complaints, objections and suggestions from the customers.

### **2.3.3 Marketing Strategies to Increase Mind Share**

There are few marketing strategies carried out by Edu Solution. The first strategy is by cooperating with secondary schools. Edu Solution will conduct a seminar with upper six, lower six students and MUET teachers. The objective of the seminar is to introduce Edu MUET Learning Portal (EMLP) to the students. During the talk, Edu Solutions will distribute the pamphlet of the product and demo the portal (EMLP) to the students.

Edu Solution will also use Facebook and Twitter as the medium to promote EMLP. Facebook and Twitter are free social networking and micro-blogging services that allow their users to send and read messages and create groups. Edu Solution will create an account in the Facebook and Twitter to attract the students. Students who come across Edu Solution group account will be exposed to EMLP. Brochures, letters, newsletters, bulletins and pamphlets will be given out to users to leave an impression on them. These business materials help to educate the users about company capabilities and to build a relationship.

## **2.4 Target Markets**

The target market that has been considered by Edu Solution is STPM students aged 18-19 years old who will be taking MUET. Edu Solution targets on STPM students because from the data gathered from MPM shows that the largest number of MUET candidates are STPM students. Table 2.5 shows the number of MUET candidates for the year 2007, 2008, 2009 and 2010. While Table 2.6 shows the number of STPM students for the year 2008, 2009 and

2010. Table 2.6 below shows that, half of the MUET candidate is STPM students. This is why Edu Solution targets on this group of peoples (STPM students).

*Table 2.5: Number of MUET candidate by year*

Year	MUET Candidate
<b>2007</b>	84,096
<b>2008</b>	85,961
<b>2009</b>	85,240
<b>2010</b>	81,731

*Source: MPM.com (2009)*

*Table 2.6: Number of STPM students taking MUET by year*

Year	STPM MUET Candidate
<b>2008</b>	46,306
<b>2009</b>	48,466
<b>2010</b>	46,554

*Source: MPM.com (2009)*

Table 2.5 and 2.6 show that around 56% of MUET candidates are STPM students. This percentage shows that half of the candidates taking MUET test is STPM students. This is why Edu Solution targets STPM students as their target market. Besides, data shows that the highest age group assessing the Internet is between 15-19 years old (refer to Table 5.3 in section 5). This is another reason why Edu Solution targets on STPM students who are aged between 18-19 years old. The highest number of Internet users by level of education is from the secondary level. Edu Solution target market is from this group of students (refer to Table 5.4 in section 5). The percentage of Internet users between the ages of 15-19 is around 18%. Based on this data, Edu

Solution estimates that the Internet users between 18-19 years old are around 7% (refer to the calculation shown below). From this, Edu Solution aims for 7% from the total number of STPM candidates for the year 2010 which is 46,554 students. So, the number of users targeted by Edu Solution for the initial product launched is 3259 users. Table 2.7 below shows the target market for EMLP is around 3259 students from the total number of STPM students who are taking the MUET test.

Calculation to estimate the target users from the age 18-19 = 7%

$$\begin{array}{cccc}
 15 - 19 = 18\% & 15 - 19 = 18 & 5 = 18 & 5X = 36 \\
 \quad \quad \quad \rightarrow & \quad \quad \quad \rightarrow & \quad \quad \quad \rightarrow & \\
 18 - 19 = ? \% & 18 - 19 = X & 2 = X & X = 36 / 5 = 7.2 = 7\%
 \end{array}$$

Table 2.7: Target market for Edu MUET Learning Portal (EMLP)

User	Number of people	Target user percentage	Target user
STPM students	46,554	7%	3259

## 2.5 Revenue Model

Edu Solution will apply three categories of revenue stream: online transactions, banner advertising, and SMS charge.

### Online Transaction

The first category of revenue stream is online transaction where there are three types of packages offered by Edu Solution which are, package A, Package B and Package C. Each of the packages offers different features with

different prices. The second category of revenue stream is online banner advertising. A Company that wants to advertise its product or services (book selling, online tools, software selling, workshop and training) can do so by advertising through banner advertising. Banners appears in fixed place in Edu MUET Learning Portal (EMLP) and will be linked to the advertiser`s websites. Each banner can be advertised whether at the main page of EMLP (first page after user has login) and at miscellaneous page (page at each module).

### **Banner Advertising**

Edu Solution will provide a medium that allows advertiser to advertise their products in the EMLP. The price varies from banner size offered and position which is based on the Online Business Malaysia (OBM) Banner advertising package. Table 2.8 below shows Edu Solution banner advertising package. Figure 2.2 shows the banner position inside EMLP.

Table 2.8: Banner Advertising Package

Banner Size	Price (RM)	Position	Benefits
Prime Sidebar Banner (125x125px)	250 per month	(Ad Slot 1)	Banner will be seen on every page of the website, in a prime sidebar location. Customers may change the banners at any time within their monthly rental period.
Leaderboard Banner (468x60px)	290 per month	(Ad Slot 2)	Banner will be seen by all our recurring visitors, who come specifically to the homepage to look for new information. Customers may change the banners at any time within their monthly rental period.
Large Rectangle Sidebar Banner (300x250px)	250 per month	(Ad Slot 3)	Banner will be seen on every page of the website, including the homepage and inner pages. Customers may change the banners at any time within their monthly rental period.

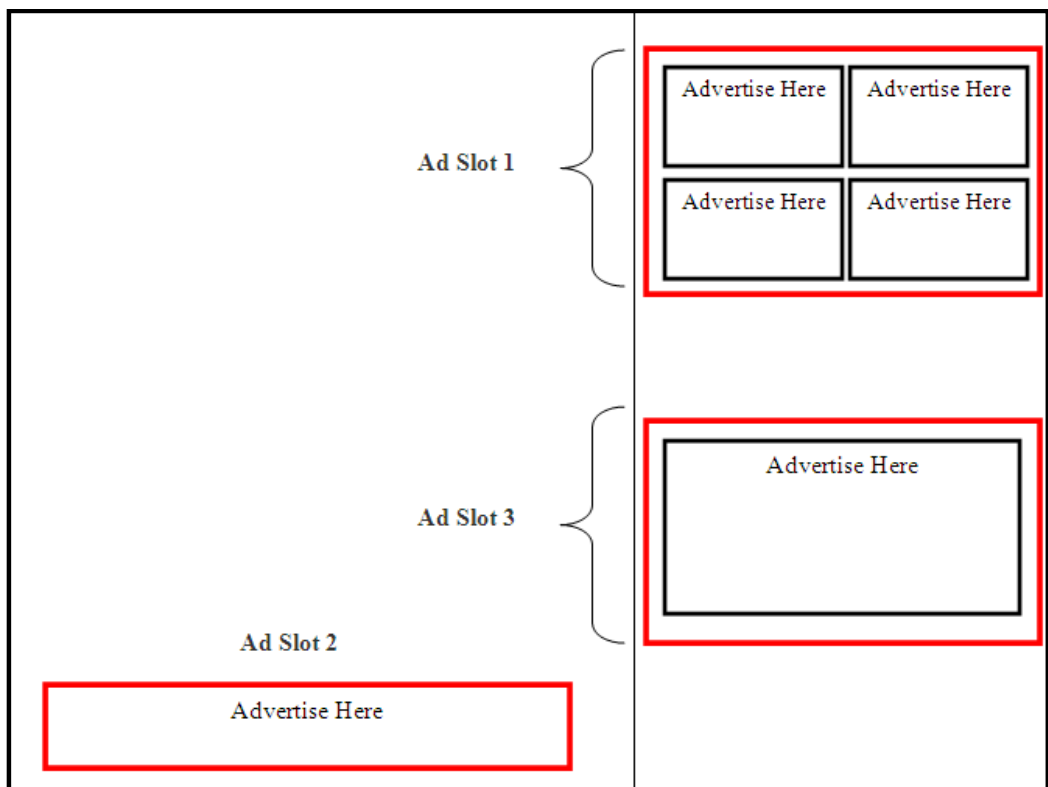
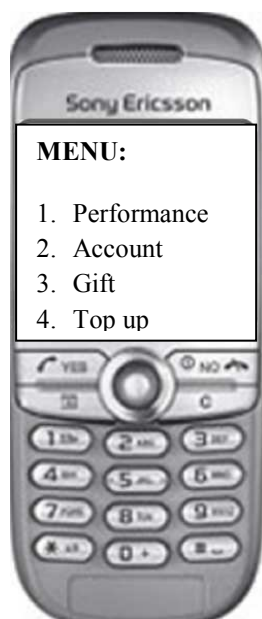


Figure 2.2: Banner position in Edu MUET Learning Portal (EMLP)

## SMS Services

The third revenue stream will be SMS charge. SMS services are available for information checking of the students' performances. Students can check their performances via SMS. Students can also check their accounts expire date via SMS. Besides, any recent news regarding the portal will be updated via SMS without any charges. The services are available to all prepaid or post-paid services of 012, 017, 016, 013 and 019 mobile phone operators providing SMS services. Each SMS costs RM0.30. Figure 2.3 shows SMS services offered by Edu Solution. Students can check their performance, account expiration date, gift information and top up to activate their account.



*Figure 2.3: SMS service provided by Edu Solution*

## 2.6 Operational setup

Edu Solution sets up its office by renting a shop lot near Kompleks Bukit Jambul. For initial operations, Edu Solution will need two personal computers (PCs), two laptops and data storage for Edu MUET Learning Portal

(EMLP). Edu Solution will outsource the development of EMLP application but Edu Solution will handle the maintenance of EMLP operations. For payment transactions, Edu Solution will use online and offline transactions. Edu Solution will use broadband for the Internet connection.

## **2.7 Market and competitor information**

Some competitors already exists in the web based educational market both in Malaysia and on the international stage. Below is some information about the competitors of Edu Solution.

### **2.7.1 Score A**

Score A is a fully interactive program based on the official government syllabus which has been proven effective to help students be exam ready and “Score A’s”. Score A provides students with many features like e-past year exam, e-topic, e-trail exam to help them prepare for their examinations. The Score A program allows students with unlimited practice to sharpen their examination skills, build their confidence and encourage them to develop a Score A attitude. Figure 2.4 shows Score A homepage.



Figure 2.4: ScoreA.com Homepage

## 2.7.2 BestariEd

BestariEd is an educational software which serves as learning aids and material for selected schools. BestariEd is developed in co-operation with the Malaysian Education Ministry. BestariEd provides learning materials for Year 1 to Form 5 students which include subjects such as Bahasa Malaysia, English, Mathematics and Science. Figure 2.5 show BestariEd's homepage.



Figure 2.5: Bestaried.com Homepage

### 2.7.3 MUET Educational Portal

This is a popular web based electronic education in Malaysia. This educational portal consists of 20 learning materials for all education level for UPSR, PMR, SPM, and STPM. The learning materials are provided by a group of mainly trained teachers and expert teachers in the related fields. Figure 2.6 shows the main page MUET Educational Portal.



Figure 2.6: MUET Educational Portal Homepage

#### 2.7.4 Traditional MUET tuition centre

One of the traditional tuition centre which provides tuition for MUET is Meteor Learning Sdn.Bhd. The services options provide by the tuition centre are intensive course & exam and course only. The fee for intensive course & exam per month is RM 240.00 and course only is RM 190.00.

### 2.8 Competitor Analysis

Edu Solution differentiate itself from its competitors based on its combination of functional criteria like web based, curriculum based, adaptivity, interactivity, self-learning, user friendly, multimedia elements, embedded with updated MUET past year question papers, notes, quizzes,

MUET tips, contents that follow the real MUET format, contents are consistent and systematically organized and provide with user account.

As shown in Table 2.9, Score A and Bestaried.com are not Edu Solution's direct competitor because both websites do not provide learning content for MUET. MUET Educational Portal is the direct competitor for Edu Solution but this web provides a simple learning for MUET. The adaptive aspect is the real strength of Edu MUET Learning Portal (EMLP). As seen in Table 2.9, the competitors do not provide an application which utilizes the adaptive system. Based on MUET learning contents, MUET Educational Portal lacks with exercises, notes, quizzes, past year question papers, MUET speaking test video and MUET tips. Besides, the learning contents inside MUET Educational Portal do not follow the real MUET format and not updated. The portal design is not consistent and not systematically organized, lacks multimedia elements, does not contain user account, not interactive, lacking effective sitemaps and good navigation, having non-standardized layout and screen design.

EMLP is better than MUET Educational Portal in terms of adaptivity, multimedia elements, interactive and embedded with updated MUET past year question papers, notes, exercises, quizzes and MUET tips. EMLP is better than MUET Educational Portal because it provides explanations for the right answers and the learning contents follow the real MUET format. Other than that, the learning contents are consistent and systematically organized and provide with user account make EMLP better than the existing portal. EMLP is also better than MUET Educational Portal because it's having an effective sitemap with good navigation and a standardized layout and screen design. The