

**USE OF LEARNING RESOURCES ON THE WORLD WIDE WEB (WWW)  
AMONG UTM STUDENTS IN PROJECT BASED LEARNING FOR ENGLISH  
FOR ACADEMIC PURPOSES**

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TAJUK PROJEK: USE OF LEARNING RESOURCES ON THE WORLD WIDE WEB (WWW)  
AMONG UTM STUDENETS IN PROJECT BASED LEARNING FOR ENGLISH  
FOR ACADEMIC PURPOSES

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## **ABSTRACT**

This research is a survey on the use of learning resources on the World Wide Web (WWW) for project based learning for the subject English for Academic Communication among UTM students in Skudai, Johor Bahru. 218 UTM students from various faculties were involved in this research. Data were collected using questionnaire and analyzed using descriptive statistics. The findings indicated that in general UTM students used the learning resources on the WWW moderately for their project based learning especially for those students who are currently taking English subject UHB 1322.

## **ABSTRAK**

Kajian ini telah dijalankan bagi mengkaji kegunaan 'World Wide Web' (WWW) sebagai sumber pembelajaran dan informasi untuk subjek Bahasa Inggeris 'English for Academic Purposes' di kalangan pelajar Universiti Teknologi Malaysia, Skudai, Johor Bahru. Kajian ini di jalankan ke atas 218 pelajar UTM dari pelbagai fakulti. Data yang diperolehi dari soalselidik dianalisis secara 'descriptive analysis'. Kajian membuktikan bahawa secara amnya pelajar UTM menggunakan sumber maklumat dari WWW adalah pada tahap sederhana untuk projek bahasa Inggeris mereka iaitu subjek UHB 1322.

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## CHAPTER I

### INTRODUCTION

#### 1.0 Background of the problem

Higher Education must be at the forefront in preparing learners for the workforce of the nation. In the Information Age, the challenge of Higher Education is to get away from classrooms that are predominantly teacher-centered and student-passive and move to those that encourage interactions and discussions among learners. In their work, *The Seven Principles for Good Practice in Undergraduate Education*, Chickering and Gamson (1987) analyzed decades of research and practice in Higher Education and derived seven guidelines to promote reform in undergraduate education. Two of these seven principles are significant to this study. First, students must be encouraged to cooperate and collaborate with other students and secondly, active learning should be integrated into the learning experience.

One way to achieve this is through the use of project-based learning. Project-based learning familiarizes learners with the culture of their future working/ professional communities. It allows learners to be directly involved in the tasks.

Project-based learning is an educational approach that challenges students to 'learn to learn'. Group work in collaborative learning is usually incorporated in a project-based learning where learners learn how to make optimal use of their time and resources while working in groups. Functioning effectively in groups involves knowing how to organize the work, distribute responsibility, break-up complex tasks, and provide useful feedback on work that is done. Students have to refer to various sources to get the materials needed for the project work assigned to them and one of the sources is through the use of the internet.

The internet increases the effectiveness of learning and instruction since it provides students with fast and extensive range of authentic learning materials compared to the conventional method of referencing. Yaacov, et.al.,(2003) in a study on the implications of university learning and instruction using Internet-based course contended that the Internet has moved learning from the formal classroom instruction to independent learning. In other words learning has become significantly more flexible and content sources have become much more accessible. Students can now create, share, and capitalise knowledge through the Internet.

## **1.1 Statement of the problem**

Computers, the Internet, and the World Wide Web (WWW) are the most powerful information and knowledge tools now available (Boettcher and Conrad, 1999). Today's advances in information technologies have created a myriad of possibilities for learning. The educational potential of the Internet must be optimally utilised by university students. The vast quantities of readily available information on the Internet should be considered as rich enhancements to language learning (Bitter and Pierson, 1999).

There has been a great deal of debate regarding the use of the Internet in teaching and learning. Given that investment in this area is likely to increase in the next decade, research is required to identify students' experiences of using the Internet for their learning process. Specifically, this study will look into students' level of dependency on using the Internet as their source of information as well as their perception on the usefulness of the Internet in their project work.

## **1.2 Research Objectives**

The objectives for this research are:

- i) To examine learners' use of the WWW.
- ii) To examine learners' participation in using WWW.



- iii) To study learners' perception of the web as a learning tool.
- iv) To survey learners' internet literacy.

### **1.3 Research Questions**

- i) What is the students' level of dependency on using the WWW as their source of information?
- ii) What is students' perception on the usefulness of the WWW as a learning tool for their project work?

### **1.4 Scope of study**

This study investigated students' use of WWW as a learning tool for their project-based task. Subjects of the study were UTM students both mainstream and SPACE, completing their project work as a part of assessment in the English for Academic Communication subject.

### **1.5 The significance of the study**

The purpose of this research is to identify the potential of the WWW as a teaching and learning tool. The findings of this study would benefit both educators and learners in which they can gain insights on the benefits and pitfalls of the WWW and help them to use the WWW effectively and efficiently and in the future.

## **1.6 Limitation the study**

The study was based on students' perception on their learning and did not reflect students actual learning achievement. Any findings of this study only provides some insights into how students felt about using WWW as one of their learning resources and therefore should not be stretched to indicate actual learning by students.

Since this study used a questionnaire as the main instrument in collecting the data the researchers did not know how those students who did not respond to or complete the questionnaire thought about the WWW and what their problems might have been. Any findings from this study only apply to those students who responded to and completed the questionnaire.

In addition, the researchers found that some of the respondents did not answer some of the sections accordingly. Therefore, the data were analysed based on the number of responded item.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

Higher Education must be at the forefront in preparing learners for the workforce of the nation. In the Information Age, the challenge of Higher Education is to get away from classrooms that are predominantly teacher-centered and student-passive and move to those that encourage interactions and discussions among learners. In their work, *The Seven Principles for Good Practice in Undergraduate Education*, Chickering and Gamson (1987) analyzed decades of research and practice in Higher Education and derived seven guidelines to promote reform in undergraduate education. Two of these seven principles are significant to this study. First, students must be encouraged to cooperate and collaborate with other students and secondly, active learning should be integrated into the learning experience. These principles will be incorporated in the following literature review section below.

This section describes the literature work on the following framework: i. ICT and Education ii. Educational Theories and Language Learning Approaches; iii. Collaborative and Project-Based Learning; and iv. ICT as a mediated tool to learning.

## 2.2 ICT and Education

Information and Communication Technology has become the buzzword in shaping today's information society world. According to Eraut (1998), *information* has been identified as the essential feature of production, consumption and exchange in a post-industrial era. He further gave three generally accepted meaning of an information society, which later was conceptualized as,

“ In the more intellectual milieu, the concept of information society is a combination of all three aforementioned meanings, and implies an awareness that there is a process of intellectualization in modern societies which requires increasing number of persons to possess a stock of knowledge enabling them to make creative use of the enormous potential of information”(p 4).

Today, creating, processing and transmitting information have become increasingly essential skills in the workforce. An information society offers favorable conditions for greater openness, mutual knowledge, tolerance and eagerness to understand one another better (Eraut 1991). ICT in education means enabling students to use, react to, select, reject, classify, check, interpret and search for information, and to adopt an autonomous and critical attitude towards resources and information found through the use it. The information society presented a two-fold challenge to education: i. Education has to allow individuals and social groups to control the evolution of the information society, so that it develops towards a genuine society of communication and culture; ii. Education has to be able to take advantage of the possibilities offered by the new communication techniques (Eraut, 1991). There is now a renewed interest in reforming education to respond to the changes brought about by ICT and to create the conditions for the maximum utilization of ICT, and ultimately in realizing the aim of education in preparing learners for the real working life. ICT is now seen as providing the avenue to train learners for lifelong learning. Educational institutions are experiencing mounting pressure to identify the most constructive and cost effective ways of using ICT

as a resource for learning. Guile (1998) puts it as “ICT will provide schools with resources which can be used to enhance the quality of learning.”(p 12). According to Guile (1998) there are four perspectives on the role of ICT in education, i. The economic perspective; ii. The equity perspective; iii. The democratic perspective; iv. The development perspective.

The economic perspective holds the view that today’s global phenomena of diminishing national economies and the new information processing skills workforces need to compete in the global economy (Reich, 1990). From this perspective, educational institutions should be able to meet the demands of the 21<sup>st</sup> century economy that learners must be equipped with the skills needed for them to survive in the new world of ‘globalizes’ work. The equity perspective emphasizes on the contribution of ICT as a tool to ameliorate social inequalities. This is to imply that ICT is more equitable than other educational resources. Supporters of democratic reform in schools believe that ICT will in future be the critical ‘tool’ for accessing information and enabling people to participate as citizens in the new information world. These constitute the democratic perspective of ICT use in education. The final major perspective, the development perspective, has its basis in developmental and educational philosophy and psychology, which bases itself on the work of psychologists like Dewey, Piaget, and Vygotsky. This is by far the most influential perspective of the use of ICT in education. They argue that ICT need to be made as a catalyst to transforming learning from transmission of learning from ‘knowledge dispenser’ to inquiry-led education which provides the opportunities for students to work collaboratively to access massive volume of information, transform ideas, experiences and points of view, and to construct new knowledge. According to Guile (1998), they urge policy makers in educational institution to “take advantage of the ways that ICT can, potentially, support students to conceptualize in new and challenging ways and actively work together to deepen their understanding and produce new knowledge” (p 9). He also argued that teachers need to identify pedagogic approaches that use ICT to support the development of students’ intellectual capabilities, skills and changing interests.

### **2.3 Educational Theories and Language Learning Approaches**

There is a rich body of educational research that deals with what it means to learn and how technology can be used to support effective learning. Learning theories are based on what knowledge is and how people learn.

One of the earliest learning theories is the behaviorist theory of learning. The work of behaviorist psychology, Skinner, has influenced language classrooms in the 60's and 70's. The behaviorist theory of learning is based on the belief that learning occurs when a learner is substantially conditioned with the learning materials and that there is a significant place for reward and punishment in the process of conditioning learners. In the language teaching and learning domain, this behaviorist influence can be seen in the structuralize approach to learning (Warschaeur & Kern, 2000). The main emphasis is on the formal analysis of the structures of the language being learned and language learning is conceived as habit formation. The language teaching is characterized with various structural methods of language instruction, while learning was predominantly of prescriptive grammar rules, memorization, and translation. Drill and practice type of learning is adapted to condition learners with the accurate use of the language being learned.

The second learning theory is the information processing model of learning or theory of cognition. This learning theory is based on the literal interpretation of the metaphor of learners as information processors (Mayers, 1996). People are believed to be processors of information. They take information as input, apply mental operators to it, and produce information as output. Knowledge is assumed to be an entity that exists independently from a person's mind. As such, it is something that can be transferred from one person to another. Di Viesta (1987) explains that 'knowledge consists of copying elements from the world into a sensory store in a mechanistic way.' In the language teaching and learning domain, the work of Chomsky is parallel to this cognitive, information processing theory of learning. Chomsky's notion of innate cognitive structure has led to the belief that language learning is not as conditioned response as in

the behaviorism, but as an active process of generating and transforming knowledge (Warscheur & Kern, 2000). Krashen's work on Comprehensible Input ( $i + 1$ ) where learners are seen as constructing the grammar of the language from extensive natural data, is associated with Chomsky's view of language learning. Krashen's (1985) comprehensible input theory suggests that as a result of comprehending input learners acquire morphological language features in a natural order. In other words, if the input is comprehensible to the learner, and just beyond their current proficiency level, the acquisition of the target language becomes a natural learning process.

The third learning theory is the one that is significant to this study, the Constructivist theory of learning. Constructivism is an alternative to traditional learning theory that was founded in the 1950's by researchers including Piaget and Vygotsky. Constructivism theorist believe that knowledge is constructed by individuals as they interact with an object or an event, in relation to their past experiences, their beliefs and their current mental structures (Honebein et al, 1997; Black & McClintock, 1995). For constructivists, learning is the process by which accessed information is transformed into personal knowledge (Jonassen et al, 1997). It involves an evaluation of the new information based on existing mental models, and an augmentation and reorganization of these models to reflect the new knowledge (Soloway et al, 1996). This is a process of internal negotiation of meaning. Mayers (1992) explain that the focus of instruction is the learner's cognition, the goal of instruction is to help learners develop learning and thinking strategies, and the evaluation of learning outcomes consists of determining how the student structures and processes knowledge. Constructivists see the teacher's role more of a facilitator to learning as oppose to being the keepers and dispensers of knowledge (Bostock, 1997; Relan & Gillani, 1997; Soloway et al, 1994). A further extension of constructivism is social constructivism which is oftenly known as Sociocultural Theory.

Social constructivism, pioneered by Lev Vygotsky, advocates the theoretical framework of mind and thought as the by-product of social interactions and cultural influences. This theory asserts that there is a relationship between social processes and

the construction of knowledge (Bonk & King, 1998). Two main concepts of Vygotsky's socialcultural theory significant to this study are, i. the Zone of Proximal Development (ZPD) and ii. Learners are active constructors of knowledge. The ZPD is based on the premise that learners can achieve more when working with adult and/or capable peers. According to Lantolf (2000), 'the ZPD is the difference between what a person can achieve when acting alone and what the same person can accomplish when acting with support from someone else and/or cultural artifacts' (p 17). Sociocultural theorists believe that an individual acquires new mental functions and patterns of thought from the mediational assistances of tools, signs, and human scaffolding when it is offered within his or her zone of proximal development. According to Wells (1997) ZPD is formed not just within an individual learner, but also in the interaction between the learner, co participants, and available tools during involvement in a common activity. In many ICT and education studies computer technology is often classified as a 'more capable peer' in learning and a mediated tool to learning (Bonk & Cunningham, 1998).

Learning a language is an active and interactive process. Thus, it requires learners of languages to be active constructors of the language they are learning. Learners need to constantly construct sentences and/or dialogues and make use of them in real social interactions. This theory of learning is parallel to the sociocognitive approach in language learning. Hymes and Halliday, two sociocognitivists who argue that language is a socially constructed phenomena and place emphasis on the social appropriateness of language use. Language learning aims not only at achieving linguistics competence but more importantly sociolinguistics, discourse, and strategic competence. Sociocultural theory and sociocognitive approach to language learning is grounded in the assumption that the best way to develop both mentally and socially is through interaction with others, using mediating tools, and the artifacts that surround learners in their learning environment. This is best accomplished through an active, socially constructed environment. In such environment, learners get involved in their own learning and that of others around them and the learning environment is constructed with authentic activities in which students 'participate in and negotiate their way through new situations' (Barab & Duffy, 2000,p 71). As Greeno (1997) explain,



“We can work toward developing the arrangements for this broader range of participation by students so they can understand that the skills and knowledge they are acquiring have significance for the contributions to the communities in which they participate at present and in the future, and that their learning in school is an integral part of their development as successful and productive individual agents and learners” (p 9).

The encouragement of students to participate actively in learning is grounded in teaching them to learn collaboratively.

#### **2.4 Collaborative and Project-Based Learning**

In the changing world today there is a growing call for classroom experiences to resemble the student’s future working world. Project-based learning is a curricular framework that addresses the complex knowledge and skill applications that face students in their future life. It is about understanding and interpreting of complex information, and the ability to acquire and interpret new information against prior knowledge. It is also about revising skill and knowledge when presented with challenges, realizations, and transformations (Bruner, 1966; Fosnot, 1996; Tanner; 1997; Wadsworth,1989).

Students in higher learning institutions must be engaged and active in their learning to acquire the skills necessary to cope with the current expectations facing them. Collaborative learning requires that learners be actively involved in a community in which they interact with others and utilize the tools and artifacts available to accomplish the goals and objectives of the groups. When students collaborate they interact in socially accepted ways and converse among themselves to reach goals through consensus arrived at by the group (Gerlach, 1994 ). In the Collaborative Model described by Reid et al (1989) there are five instructional phases for collaborative learning: engagement, exploration, transformation, presentation, and reflection.

The engagement phase is where the teacher sets the stage by providing the class with a collaborative activity. It is highly recommended that the activity provides a sense of ownership to the learners. In the exploration phase, learners work on the initial exploration of ideas and information. The teacher needs to decide how much input should be given for the learning task, and how much should be left to the resourcefulness of the learners.

Project-based learning is an educational approach that challenges students to 'learn to learn. Group work in collaborative learning is usually incorporated in a project-based learning where learners learn how to make optimal use of their time and resources while working in groups. Functioning effectively in groups involves knowing how to organize the work, distribute responsibility, break up complex tasks, and provide useful feedback on work that is done.

Teacher's feedback is integral to improve student learning. Project-based learning familiarizes learners with the culture of their future working/ professional communities. It allows learners to be directly involved in the tasks. Interviews by Lenschow (1998) of students in traditional lecture classes gave clear indication that they learned least from lectures, more from tasks, and most from fellow students/learners. While working in a collaborative team, learners gain control and greater understanding of the work, and this helps them to acquire better self-confidence and better reflective skill in their learning. Project-based learning fits into what Guile (1998) terms as 'inquiry-led education' or 'inquiry-based learning'. This type of learning are learner-centered in nature where interactive mode of communication is emphasized and the technology use goes beyond the drill and practice type to significantly support collaboration, communication, information access and expression. The pedagogic implications for inquiry-based learning where students retrieve information from database/websites, is that the teacher structure learning process to ensure students not only become passive recipient of information but more importantly, analyze and discuss content of information, clarify

understanding in relation to goals of learning, and let students consider and decide how to personalize information and produce new text.

## **2.5 The World Wide Web in Higher Education**

“Computers, the Internet, and the World Wide Web (WWW) are the most powerful information and knowledge tools now available” (Boettcher & Conrad, 1999). Today’s information communication technology (ICT) is a fundamental change agent that will bring us to individual, social, and organizational shifts. The Internet, which has grown tremendously in hosting massive volume of information, is expected to have a far-reaching and profound impact in higher education. The World Wide Web is the window through which most people view the Internet. The Web represents the broadest and most powerful Internet application with two main elements. The hypertext link allows anything on one page to link to any other page in the world. The other equally important feature of the Web is its ability to combine objects of many different types makes it an excellent format for mixed media. The multimedia nature of the Web and the use of the Web page as an interface to other services have greatly expanded the power of the Internet by making it possible to display information using a combination of formats ( Fidelman, 1996; Teeler & Gray, 2000). This is an essential feature for the delivery of authentic materials, including texts, images, sound recordings, video clips, virtual reality worlds, and dynamic, interactive presentations. Many claims have been made about its potential contribution to enhance learning (Pachler, 1999; LeLoup & Ponterio, 2000).

“Because of the speed of data processing, the storage capacity of computers and instant accessibility of electronically transmitted data, we now live in a global capsule with the world at our fingertips, no more than a few clicks of the mouse away.” (La Velle and Nichol, 2000, p 99).

The fast-growing array of electronic information resources is often viewed as a significant opportunity for change in education. In Higher Education, academics are

envisaging a shift towards increased student independence in learning. Accessing and using information resources is one of the ways in which students begin to act as independent learners, becoming involved in making choices, weighing evidence and coming to conclusions for themselves. Many educationists, especially in Higher Education, believe that the new opportunities for electronic information access will promote and accelerate this process. MacFarlane (1995) emphasized a shift towards more independence in learning where students need to “manage their own learning processes to an unprecedented degree...to swim in a sea of information” (p 64). The ability to locate, manage and use a large and diverse set of information resources has been termed “information literacy” (Bruce and Candy, 2000; Dupuis, 1997). Candy (1998) suggests that, in addition to skills such as locating and obtaining information, a significant component of information literacy in a Higher Education context is the development of subject matter autonomy. If students are to develop information literacy, including subject matter autonomy, the context in which they are learning must allow and encourage them to act as autonomous information users. Electronic information resources on the World Wide Web have been deemed by enthusiasts as leading to reduce dependence on lecturers and more autonomy in learning. Pickering (1995) suggests that the Web offers an opportunity for a radical educational transformation.

While quantity, quality and level of ICT resource continue to improve in many higher learning institution in this country, provision of equipment alone is likely to be of limited value unless more is understood about the interactions and processes engendered by using technology in different settings. Learners’ perceptions play an important part in framing the activity in their learning process. Pollard and Tann (1993) argued that university undergraduates should be seen as active participants in shaping educational processes rather than viewed as passive recipients of them. Young people are capable of insightful and constructive analysis of their experience of learning and are able to comment on approaches and context that aid learning (Rudduck & Flutter, 2000). Bullen (1998) stresses the need for more studies that examine web learning from the learners’ perspective.

Several studies have investigated learners' experience and perception of using electronic information in the Web environment (Bilal, 1998; Dalgeish & Hall; Hirsh, 2000). In addition, there are also some longitudinal studies that explore relations between users' experience with the Web, their use and their perceptions (Anandarajah et al, 2000; Ford et al 2001; Heimrath and Goulding, 2001). An interesting finding in a study conducted by Dinet et al (2003) is that students with high Web experience were more critical, less confident and less enthusiastic in using the Web for information searching than students with low Web experience. Students majoring in different disciplines also presented different patterns of perception of the Web in information searching. Culpan (1995) argued that no matter how sophisticated a technology is, its effective use and implementation depends upon users having a positive attitude towards it.

As a conclusion, nowadays higher education needs to practice the seven principles for good practice in future undergraduate education. Two of these seven principles are significant for this research. First, students must be encouraged to cooperate and collaborate with other students. Second, active learning should be integrated into the learning experience. There are four part of framework of using learning resources on WWW in English academic purposes. There are ICT and education, education theories and language learning approaches, collaborative and project-based learning and ICT as a mediated tool to learning for academic purpose.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This purpose of this research is to identify the use of learning resources on the World Wide Web (WWW) among UTM students who are involved in project based on learning for the subject English for Academic Communication.

#### **3.2 Research Design**

This research aims to look at the perception and experience of the respondents towards using the learning resources on the WWW. In this chapter, the researchers will discuss the research instrument, sampling and sampling procedures and data analysis.

#### **3.3 Research Instruments**

##### **3.3.1 Primary Data**

A set of questionnaire will be distributed to the respondents at the end of their course to elicit data for the study. The questionnaire is divided into four parts. There are:-

1. Part A is consisted of demography information such as background of respondent which consist of faculty, gender, topic chosen, percentage of online reading materials used, percentage of offline / hard-copy reading materials use and UHB 1322 section.
  
2. Part B is relevant questions with students' experience with WWW.
  - ❖ Experience with the World Wide Web.
  
  - ❖ Frequency of use for education, entertainment (music, film, etc.), online shopping, sports and news.
  
  - ❖ Current feeling about using the WWW.
  
  - ❖ Search engine normally used to locate materials for the project work.
  
  - ❖ Database online titles normally used to locate materials for the project work.
  
4. Part D is about students' Internet Literacy.
  - ❖ Internet literacy.

### **3.4 Sampling And Sampling Procedure**

A sample of 225 UTM students was selected for the study. The respondents for this research were students from various faculties such as FAB, FSKSM, FS, FKE, FKM, FKA, FKSG, FPPSM and FKKS SA in UTM, Skudai, Johor. The respondents were currently taking UHB 1322 (English for Academic Communication)

### **3.5 Data Analysis Procedure**

Data will be analyzed using the Statistical Packages For Social Sciences (SPSS – Version 11) to determine students' participation and perception in using WWW as a tool in completing their project work. Two types of analysis will be done. There are descriptive statistics that is used to determine the level of perception and experience with WWW and inferential statistics, which is used to determine the difference in perception and experience according to respondents' gender, race and course.



## CHAPTER 4

### RESULTS

#### 4.0 Introduction

This chapter presents the findings of the study. The results are divided into two parts:

Part A : Respondents' background and usage of WWW

Part B : Perceptions toward WWW and facilities provided

Part C : Inferential analysis to determine whether there is a difference between the Mainstream and SPACE students based on their experience in the use of WWW.

#### 4.1 Respondents' Background and Usage of the WWW

##### 4.1.1 Respondents' Background

**Table 4.1.2 The Number Of Respondents and Percentage According to Group**

Item	Number (N = 218)	Percentage
Group		
1. Main Stream	160	73.4
2. Space Programme	58	26.6
Gender		
1. Male	96	44.0
2. Female	122	56.0
Total	218	100

Table 4.1 shows the number of respondents and the percentage according to mode of study and gender. Based on 218 respondents chosen for this research, 160 (73.4%) are the Mainstream students while 58 (26.6%) are SPACE students. 96 (44%) of them are male and 122 (56%) are female.

**Table 4.2 The Number of Respondents and Percentage According to Faculty**

Item	Number (N = 218)	Percentage
Faculty	33	15.1
1. Faculty of Built Environment (FAB)	52	23.9
2. Faculty of Computer Science and Information System (FSKSM)	15	6.9
3. Faculty of Science (FS)	42	19.3
4. Faculty of Electrical Engineering (FKE)	29	13.3
5. Faculty of Geoinformation Science (FKSG)	3	1.4
6. Faculty of Chemical Engineering and Natural Resources Engineering (FKKSA)	1	0.4
7. Faculty of Mechanical Engineering (FKM)	17	7.8
8. Faculty of Education (FP)	3	1.4
9. Faculty of Management and Human Resource Development (FPPSM)	4	1.8
10. Faculty of Civil Engineering (FKA)	19	8.7
11. Not Stated		
Total	218	100

Table 4.2 indicates the number of respondents and its percentage according to faculty. From the table, the highest number of respondents are from FSKSM (23.9%), followed by FKE (19.3%) and FAB (15.1%). The least number of respondents is from FKM (0.4%)

**Table 4.3 The Number of Respondents Using Online and Offline Reading Materials.**

<b>Item</b>	<b>Number (N=218)</b>	<b>Percentage</b>
1. Percentage of online reading materials used		
- Less than 25%	7	3.2
- 26 – 50%	57	26.1
- 51 – 75%	58	26.7
- 76% and above	57	26.1
- No answer	39	17.9
2. Percentage of offline reading materials used		
- Less than 25%	33	15.1
- 26 – 50%	83	38.8
- 51 – 75%	31	14.2
- 76% and above	7	3.2
- No answer	64	29.4
<b>Total</b>	<b>218</b>	<b>100</b>

Table 4.3 shows the number of respondents who used online and offline reading materials and their percentage.

The table illustrates that 58 respondents used about 51 – 75% of online reading materials in their studies, followed by 57 respondents who used about 26 – 50% and 76% and above respectively. About 3.9% of the respondents used less than 25% of online reading materials in their studies. 39 respondents did not answer this question.

For the offline reading materials used, only 17.4% of the respondents used more than 50% offline materials for their project work. More than half of the respondents (53.9%) used less than 50% offline materials in which out of this, 15.1% respondents used less than 25% and 38.8% respondents used between 26% - 50% offline reading materials. 29.4% of the respondents did not answer the question.

The findings show that respondents relied on WWW to obtain data for their project work. More than half of the respondents reported using more than 50% online reading materials in contrast to only 17.4% of the respondents who used more than 50% offline reading materials.

#### 4.1.2 Respondents' Experience with the World Wide Web

##### 4.1.2.1 Respondents' Experience with the web before and after the Project work according to group.

**Table 4.4 Respondents Experience with the Web (Before The Project Work) According To Group**

Students Group	Frequency of using the Web (Before The Project Work)				Total
	Seldom	Occasionally	Frequently	Central to studies	
Mainstream	<u>30</u> 18.8%	<u>42</u> 26.3%	<u>68</u> 42.5%	<u>20</u> 12.5%	<u>160</u> 100.0%
SPACE	<u>5</u> 8.6%	<u>16</u> 27.6%	<u>23</u> 39.7%	<u>14</u> 24.1%	<u>58</u> 100.0%
Total	<u>35</u> 16.1%	<u>58</u> 26.6%	<u>91</u> 41.7%	<u>34</u> 15.6%	<u>218</u> 100.0%

*The underlined figures represent the number of students*

Table 4.4 shows the respondents experience with the web (Before the Project Work) according to group.

Out of 160 Mainstream students, 68 respondents (42.5%) stated that they frequently surf the web before the project work, 42 students (26.3%) had experience with the web occasionally, 30 students (18.8%) seldom surfed the web and 20 students (12.5%) stated that using the web was central to their studies. This shows that more than half of the mainstream students relied on the web prior to project work.

For SPACE programme, out of 58 students, 37 (63.8%) reported that using the web was part of their activities prior to the project work. 23 (39.7%) students said that they frequently surfed the web, while 14 (24.15%) said that using the web was central to their studies. The findings indicate that more SPACE students used the web compared to the Mainstream students before they were assigned to the project work. Overall, more than 50% of the respondents were familiar with the web as they frequently used the web to search for materials for study purposes.

**Table 4.5 Respondents' Use of the Web (After the Project Work)**

Student Group	Frequency of surfing the web (after the project work)				Total
	Seldom	Occasionally	Frequently	Central to studies	
Mainstream	<u>19</u> 12.1%	<u>43</u> 27.4%	<u>65</u> 41.4%	<u>30</u> 19.1%	<u>157</u> 100.0%
SPACE	<u>1</u> 1.9%	<u>10</u> 18.5%	<u>24</u> 44.4%	<u>19</u> 35.2%	<u>54</u> 100.0%
Total	<u>20</u> 9.5%	<u>53</u> 25.1%	<u>89</u> 42.2%	<u>49</u> 23.2%	<u>211</u> 100.0%

*The underlined figures represent the number of students  
7 respondents did not answer the question*

Table 4.5 shows the respondents' experience with the web (After the Project Work).

In general, it can be seen that the use of WWW increased after students were assigned to the project work. 65.4% of the respondents used the web after the project work in comparison to 57.3% before the project work.

Based on groups, SPACE students showed a 15.8% increase on the use of the WWW after project work in which 79.6% claimed that they either frequently surfed the net or the web was central to their studies. For the Mainstream Students, the percentage of students who used the web frequently and central to studies also increased from 55% before project work to 60.5% after the project work. These confirm the previous findings that UTM students used the internet widely to obtain materials for their assignments and

project. SPACE students show high dependency on the internet compared to the Mainstream students. This could be probably due to their limited access to the university library as they only come to the campus during weekends.

#### 4.1.2.2 Purpose of Surfing the Web

**Table 4.6 Purpose of Surfing The Web According To Group**

Purposes	Student Groups	Most frequent			Least frequent		Total
		1	2	3	4	5	
Education	Mainstream	<u>69</u> 45.1%	<u>40</u> 26.1%	<u>24</u> 15.7%	<u>12</u> 7.8%	<u>8</u> 5.2%	<u>153</u> 100.0%
	SPACE	<u>36</u> 65.5%	<u>12</u> 21.8%	<u>3</u> 5.5%	<u>1</u> 1.8%	<u>3</u> 5.5%	<u>55</u> 100.0%
	Total	<u>105</u> 50.5%	<u>52</u> 25.0%	<u>27</u> 13.0%	<u>13</u> 6.3%	<u>11</u> 5.3%	<u>208</u> 100.0%
Entertainment (music, film, etc.)	Mainstream	<u>49</u> 36.0%	<u>31</u> 22.8%	<u>19</u> 14.0%	<u>29</u> 21.3%	<u>8</u> 5.9%	<u>136</u> 100.0%
	SPACE	<u>4</u> 8.0%	<u>8</u> 16.0%	<u>9</u> 18.0%	<u>11</u> 22.0%	<u>18</u> 36.0%	<u>50</u> 100.0%
	Total	<u>53</u> 28.5%	<u>39</u> 21.0%	<u>28</u> 15.1%	<u>40</u> 21.5%	<u>26</u> 14.0%	<u>186</u> 100.0%
Online shopping	Mainstream	<u>6</u> 4.4%	<u>3</u> 2.2%	<u>9</u> 6.6%	<u>14</u> 10.3%	<u>104</u> 76.5%	<u>136</u> 100.0%
	SPACE	<u>3</u> 7.5%	<u>1</u> 2.5%	<u>3</u> 7.5%	<u>6</u> 15.0%	<u>27</u> 67.5%	<u>40</u> 100.0%
	Total	<u>9</u> 5.1%	<u>4</u> 2.3%	<u>12</u> 6.8%	<u>20</u> 11.4%	<u>131</u> 74.4%	<u>176</u> 100.0%
Sports	Mainstream	<u>15</u> 12.0%	<u>12</u> 9.6%	<u>28</u> 22.4%	<u>57</u> 45.6%	<u>13</u> 10.4%	<u>125</u> 100.0%
	SPACE	<u>6</u> 16.2%	<u>8</u> 21.6%	<u>8</u> 21.6%	<u>11</u> 29.7%	<u>4</u> 10.8%	<u>37</u> 100.0%
	Total	<u>21</u> 13.0%	<u>20</u> 12.3%	<u>36</u> 22.2%	<u>68</u> 42.0%	<u>17</u> 10.5%	<u>162</u> 100.0%
News	Mainstream	<u>20</u> 16.0%	<u>41</u> 32.8%	<u>44</u> 35.2%	<u>13</u> 10.4%	<u>7</u> 5.6%	<u>125</u> 100.0%
	SPACE	<u>7</u> 18.4%	<u>8</u> 21.1%	<u>14</u> 36.8%	<u>7</u> 18.4%	<u>2</u> 5.3%	<u>38</u> 100.0%
	Total	<u>27</u> 16.6%	<u>49</u> 30.1%	<u>58</u> 35.6%	<u>20</u> 12.3%	<u>9</u> 5.5%	<u>163</u> 100.0%

*The underlined figures represent the number of students.  
Not all respondents answered the questions completely.*

Table 4.6 shows the purpose of web surfing among the respondents. The findings indicate that most respondents used the web for educational purposes in which 71.2% of the mainstream students and 87.3% of SPACE students surfed the web mainly for these purposes. Using the web for news purposes took the second highest among both the Mainstream and SPACE students with 48.8% and 39.5% respectively. The respondents also used the web for entertainment purposes with the mainstream reported 58.8% and SPACE 24%. The least frequently used of internet were for online shopping and sports with only 7.4% and 14% respectively for both groups of respondents.

## 4.2 Respondents' Perceptions toward WWW

### 4.2.1 Feelings toward WWW

**Table 4.7 Respondents' Feelings towards Using WWW**

Feelings	Scale						Feelings
	1	2	3	4	5	6	
Stimulating	<u>39</u> 18.6%	<u>65</u> 31.0%	<u>74</u> 35.2%	<u>25</u> 11.9%	<u>7</u> 3.3%	-	Dull
Fun	<u>72</u> 33.6%	<u>67</u> 31.3%	<u>46</u> 21.5%	<u>20</u> 9.3%	<u>5</u> 2.3%	<u>4</u> 1.9%	Dreary
Hindering	<u>13</u> 6.1%	<u>23</u> 10.8%	<u>39</u> 18.4%	<u>35</u> 16.5%	<u>52</u> 24.5%	<u>50</u> 23.6%	Helpful
Easy	<u>71</u> 33.3%	<u>60</u> 28.2%	<u>51</u> 23.9%	<u>17</u> 8.0%	<u>13</u> 6.1%	<u>1</u> 0.5%	Difficult
Time efficient	<u>62</u> 29.0%	<u>51</u> 23.8%	<u>63</u> 29.4%	<u>23</u> 10.7%	<u>12</u> 5.6%	<u>3</u> 1.4%	Inefficient (time wasting)
Demanding	<u>23</u> 10.8%	<u>52</u> 24.4%	<u>79</u> 37.1%	<u>37</u> 17.4%	<u>13</u> 6.1%	<u>9</u> 4.2%	Not demanding
Reliable	<u>32</u> 15.0%	<u>72</u> 33.6%	<u>73</u> 34.1%	<u>24</u> 11.2%	<u>12</u> 5.6%	<u>1</u> 0.5%	Unreliable
Exciting	<u>65</u> 30.2%	<u>76</u> 35.3%	<u>46</u> 21.4%	<u>19</u> 8.8%	<u>6</u> 2.8%	<u>3</u> 1.4%	Boring

*The underlined figures represent the number of students according to group  
Not all respondents answered the questions completely.*

Table 4.7 illustrates the respondents' feeling towards using the WWW. Generally, UTM students had positive feelings toward WWW. More than 80% of the respondents stated that WWW was stimulating, fun, easy to use, time efficient, reliable and exciting. However, 35.3% claimed that the WWW was hindering and 72.2% claimed that it was demanding. This could probably be due to the abundance of materials they retrieved from the internet that caused information overload and difficulty in selecting the appropriate and relevant materials.



#### 4.2.2 Usefulness of WWW

**Table 4.8 Perceptions on the Usefulness of WWW for the Project Work.**

Level of Perception	Number	Percentage
- Not useful	-	-
- Useful	55	25.22
- Very useful	163	74.78
<b>Total</b>	<b>218</b>	<b>100</b>

Table 4.8 shows the respondents level of perceptions on the usefulness of WWW for their project work. Analysis was made based on the 14 items asking students various questions regarding how WWW helped them in their project work. Based on the analysis, it was found that all the respondents stated that WWW was useful for their project work. Out of 218 respondents, 163 (74.78%) claimed that WWW was very useful while 55 (25.22%) said that WWW was useful.

### 4.3 Facilities Provided by the University

#### 4.3.1 Internet Access

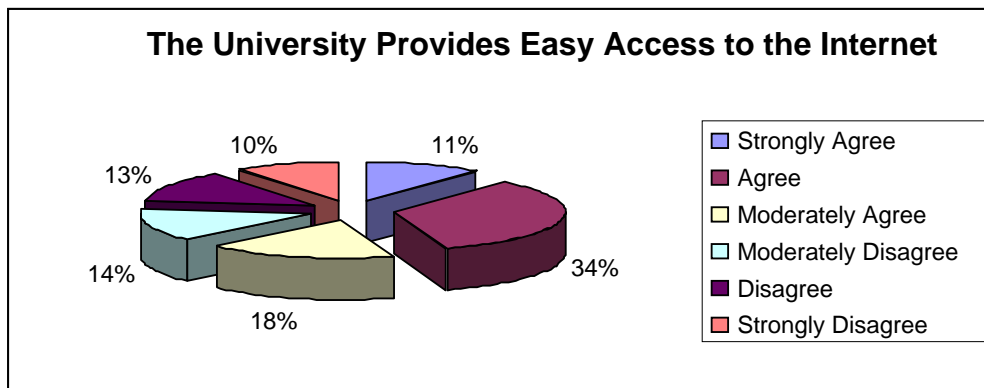


Figure 4.1 Internet Facilities Provided by the University

Figure 4.1 shows the distribution of respondents' opinion on the internet facilities provided by the university. 63% of the respondents agreed, strongly agreed and moderately agreed that the university provides easy access to the internet. On the other hand, 37% of the respondents disagreed, moderately disagreed and strongly disagreed.

The respondents who stated that they could have easy access to the internet on campus were most probably the mainstream students. Since most of them were full time students and staying on campus, they had no difficulty in using the facility. In contrast, SPACE students who were mainly part-time students would have more difficulty in using the facility since they only came to campus after office hours and during weekends for lectures. Therefore, there was less time for them to make full use of the facility provided.

#### 4.3.2 Printing Facilities

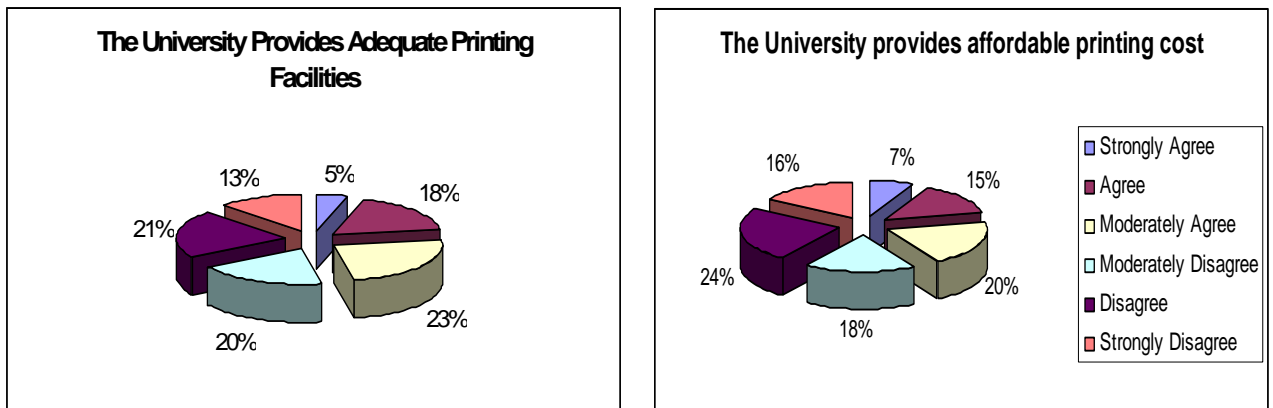


Figure 4.2 Printing Facilities Provided by the University

Figure 4.2 above shows students' opinion on the printing facilities adequacy and costs provided by the university. Based on the chart, 46% of the respondents were either agree, moderately or strongly agree that the university provides adequate printing facilities. On the other hand, 54% of the respondents were either disagree, moderately disagree or strongly disagree.

In addition, the respondents also felt that to print the materials from the internet was quite costly. More than half of the respondents (58%) claimed that the university did not provide affordable printing cost. Only 22% of the respondents were either agree or strongly agree that the printing cost was affordable.

As can be seen, more respondents felt that the university did not provide adequate printing facilities for students. This is parallel with the percentage of respondents' who felt that the printing facilities were expensive. This is understandable since students have to queue to print their materials due to insufficient numbers of printer available. Moreover, students were charged for printing the reading materials based on page. Since the websites provide abundance of materials, students tend to print as many downloaded reading materials as possible deemed relevant for their project work. This could be the reasons for their dissatisfaction towards the printing facilities provided by the university.

### 4.3.3 The Use of Online Database Titles

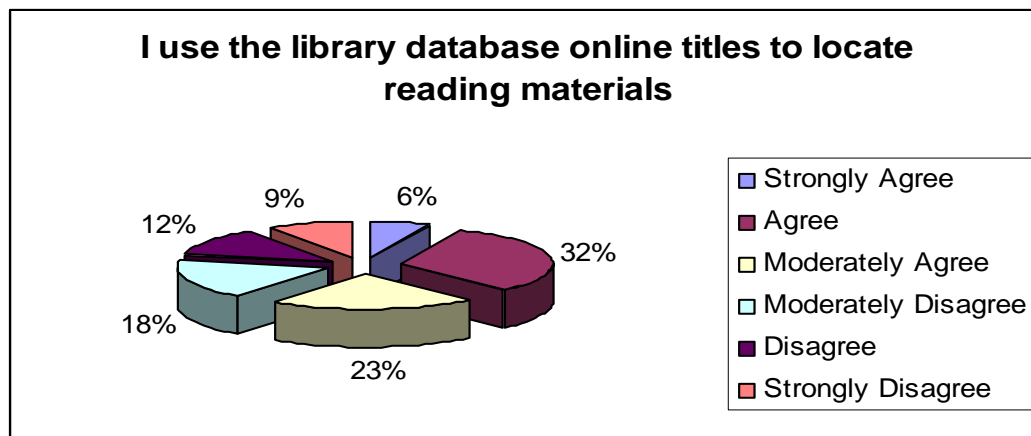


Figure 4.3 The Use of Library Database Online Titles to Locate Reading materials

Figure 4.3 shows students use of the university's library database online titles to locate reading materials for their project work. As can be seen from the pie chart, nearly two-thirds of the respondents used the database online titles available in the university's library. Only 21% did not use the facility.

It can be concluded from the findings that the database online titles were widely used by the respondents to locate the reading materials for their project. This is because the all mainstream students who enrolled for English for Academic Communication course had to attend the library referencing skills session conducted by the library staff at the beginning of the semester. Therefore, they were exposed to various information searching methods to collect materials for their project. However, due to the nature of SPACE programme schedule, the library referencing skill session was not included as part of the course. This could be the reason why a small number of the respondents did not use the library database online titles.

#### 4.3.4 The Online Titles Used by the Respondents

**Table 4.9 The Online Database Titles Used to Locate Materials for Project Work**

Online Database Titles	Student Group		Total
	Mainstream	SPACE	
Science Direct	<u>28</u> 20.9%	<u>5</u> 11.9%	<u>33</u> 18.8%
Proquest Direct	<u>7</u> 5.2%	<u>2</u> 4.8%	<u>9</u> 5.1%
Online Encyclopedia (Grolier, Americana, etc.)	<u>27</u> 20.1%	<u>7</u> 16.7%	<u>34</u> 19.3%
Applied Science and Technology	<u>54</u> 40.3%	<u>15</u> 35.7%	<u>69</u> 39.2%
Emerald	<u>1</u> 0.7%	-	<u>1</u> 0.6%
EBSCO Host	<u>1</u> 0.7%	<u>3</u> 7.1%	<u>4</u> 2.3%
Environmental Sciences Electronic Library	<u>10</u> 7.5%	<u>5</u> 11.9%	<u>15</u> 8.5%
Others	<u>6</u> 4.5%	<u>5</u> 11.9%	<u>11</u> 6.3%
Total	<u>134</u> 100%	<u>42</u> 100%	<u>176</u> 100%

*The underlined figures represent the number of students*

Table 4.9 shows the online database titles used to locate materials for the students project work.

The most popular database online title among the respondents who used online database was Applied Science and Technology which is 39.2%. The least popular online database title was Emerald which constitutes only 0.6% of users. Other popular database titles among students were Science Direct and online encyclopedia such as Grolier and Americana, which constitutes 18.8% and 19.3% respectively. Out of 218 respondents, 42 (19.26%) respondents did not use any online database titles for their project.

#### 4.4 Internet Literacy

##### 4.4.1 Level of Confidence in Using the Internet

Tables 4.10 and 4.11 show the respondents' Internet literacy. Respondents' literacy is based on students' confidence level in using the Internet for various purposes.

**Table 4.10 Respondents' level of Confidence in Using the Internet**

<b>Level of Perception</b>	<b>Number (N=213)</b>	<b>Percentage</b>
- <b>Not confident</b>	<b>25</b>	<b>11.7</b>
- <b>Confident</b>	<b>125</b>	<b>58.7</b>
- <b>Very confident</b>	<b>63</b>	<b>29.6</b>
<b>Total</b>	<b>213</b>	<b>100</b>

Table 4.10 illustrates the respondents' overall level of confidence in using the Internet for various purposes. Out of 218 respondents, 5 did not answer any of the items. Therefore, the analysis is based on 213 respondents.

It can be seen from the table that majority of the respondents which is 58.7% were confident in using the Internet for various purposes. 29.6% were very confident while 11.7% were not confident in using the Internet for some purposes.

**Table 4.11 Respondents' Confidence in Using the Internet based on Items.**

	Items	NC	MC	C	VC	Mean	SD
a.	Send and receive email	<u>9</u> 4.2%	<u>28</u> 13.1%	<u>69</u> 32.4%	<u>107</u> 50.2%	3.29	0.85
b.	Download files from the Internet	<u>10</u> 4.7%	<u>31</u> 14.6%	<u>95</u> 44.6%	<u>77</u> 36.2%	3.12	0.83
c.	Use Internet search engine to locate materials	<u>14</u> 6.9%	<u>27</u> 13.2%	<u>83</u> 40.7%	<u>80</u> 39.2%	3.12	0.89
c.	Send and open attachment in email	<u>13</u> 6.1%	<u>43</u> 20.2%	<u>80</u> 37.6%	<u>77</u> 36.2%	3.04	0.90
d.	Use instant messaging software (such as ICQ, MSN Messenger, Yahoo Messenger, AOL Instant Messenger, etc.)	<u>20</u> 9.4%	<u>59</u> 27.7%	<u>82</u> 38.5%	<u>52</u> 24.4%	2.78	0.92
e.	Upload files to the Internet	<u>26</u> 12.4%	<u>62</u> 29.7%	<u>87</u> 41.6%	<u>34</u> 16.3%	2.62	0.90
f.	Participate in an online live discussion using chat rooms (IRC)	<u>49</u> 23.8%	<u>62</u> 30.1%	<u>49</u> 23.8%	<u>46</u> 22.3%	2.45	1.08
g.	Participate in an online discussion using a mailing list (listservs like yahoo groups)	<u>38</u> 18.4%	<u>80</u> 38.6%	<u>58</u> 28.0%	<u>31</u> 15.0%	2.40	0.95
h.	Create a web page	<u>91</u> 43.5%	<u>53</u> 25.4%	<u>45</u> 21.5%	<u>20</u> 9.6%	1.97	1.02

Figures with underline represent the number of students.

- NC - Not Confident
- MC - Moderately Confident
- C - Confident
- VC - Very Confident

Table 4.11 illustrates the respondents' confidence in using the Internet for various purposes.

Sending and receiving emails was found to be the activity that respondents could do most confidently. The mean score for this item is 3.29 which is the highest. Downloading files, using the Internet search engines and sending and opening attachment

in emails were also the activities respondents were very confident in with the mean scores higher than 3.0. Creating a web page was the activity that the respondents had the least confidence in with the mean score only 1.97%

The respondents were also quite confident in using instant messaging software, uploading files and participating in online discussion and chat rooms and using a mail list with the mean scores ranging from 2.40 to 2.78.

#### **4.5 Inferential Analysis**

The followings are the results of the t-tests to find out whether there is a difference between the mainstream students and SPACE students on their experience in the use of WWW. Specifically, the analysis focused on whether there is a difference between the two groups in their:

- a. feeling when using the WWW,
- b. perception on the usefulness of WWW in completing their project work, and
- c. the perception on facilities available to complete the project work.

The study also looks into a relationship between the usefulness of the Internet and level of confidence among the respondents.

**4.5.1 Comparison between the Mainstream Students and SPACE students on their experience in using WWW for the Project Work.**

**Table 4.12 T-test Analysis Comparison between Mainstream And SPACE Student Feelings when Using The WWW**

Student Group (n=205)	Mean	SD	t-test	p
Mainstream (n=151)	2.73	0.68	2.11	0.04*
SPACE (n=54)	2.49	0.83		

Confidence Level  $p \leq 0.05$

Table 4.12 shows the comparison between Mainstream and SPACE students' feelings when using the WWW. The t-test analysis found that there is a significant difference between the Mainstream students and SPACE students on their feelings towards using the WWW. The 'P' value is 0.04 at 0.05 level of significance.

Based on the descriptive data it shows that students had mixed feelings when using the WWW in conducting their project work. SPACE students indicated more positive feeling compared to the Mainstream students. Nearly three-quarters of SPACE respondents showed a positive feeling in contrast to only half of the Mainstream respondents.



#### 4.5.2 Comparison between Mainstream Students and SPACE Students on the Usefulness of WWW for the Project Work.

**Table 4.13 T-test Analysis Comparison between Mainstream Students and SPACE Students on the Usefulness of WWW**

Student Group (n=195)	Mean	SD	t-test	p
Mainstream (n=147)	3.08	0.38	2.96	0.003*
SPACE (n=48)	2.89	0.47		

Confidence Level  $p \leq 0.05$

Table 4.13 shows a comparison between the Mainstream and SPACE students on their perception on the usefulness of WWW in completing their project work. The t-test analysis indicates that there is a significant difference between Mainstream students and SPACE students' perception on the usefulness of WWW in completing the project. The 'P' value is 0.003 at 0.05 level of significance.

#### 4.5.3 Students Perception on the Facilities Provided by the University

**Table 4.14 T-test Analysis between Mainstream Students and SPACE Students Perception on the Facilities Provided by the University**

Student Group (n=213)	Mean	SD	t-test	p
Mainstream (n=160)	3.16	0.84	-3.67	0.000*
SPACE (n=53)	3.67	1.01		

Confidence Level  $p \leq 0.05$

Table 4.14 indicates the t-test analysis between the Mainstream students and SPACE students' perception on the facilities provided by the university. The T-test analysis indicates there is a difference in the groups' perception on the facilities provided

by the university. Since the ‘P’ value is 0 at the 5% level of significance, it can be concluded that there is a very significant difference on the perception of the Mainstream and SPACE students towards the facilities provided in completing their project work.

#### **4.5.4 Comparison on Students’ Confidence towards Using the Internet between Mainstream and SPACE Students**

**Table 4.15 T-test Analysis Comparison On The Confident And Ability Towards Using The Internet Between Mainstream and SPACE Students**

Student Group(n=197)	Mean	SD	t-test	p
Mainstream (n=151)	2.76	0.56	-0.27	0.79
SPACE (n=46)	2.79	0.62		

Confidence Level  $p \leq 0.05$

Table 4.15 shows a comparison on the Mainstream and SPACE students’ level of confidence in using the Internet for various purposes.

Based on the t-test analysis, it can be concluded that there is no difference in the level of confidence in using the Internet between the Mainstream and SPACE students. The ‘P’ value is 0.79 at the 5% level of significance which shows that there is no significant difference in their level of confidence.

## **CHAPTER 5**

### **CONCLUSIONS AND RECOMMENDATIONS**

Using the Internet as a learning tool is essential for every student especially at tertiary level. There are many advantages to using the services of the Internet, specifically in education. Instruction materials such as syllabi, lecture notes, presentations assignments, and announcements could be made available online. The Internet puts the concept of "anytime, anywhere" into a higher level as far as learning is concerned. Hence, the users or in this case, the students will be able to learn at their own pace.

This research has investigated the utilization of World Wide Web (WWW) as a learning tool in completing a project work for Academic Communication subject by both mainstream and SPACE students of Universiti Teknologi Malaysia (UTM). The objectives of this research are to look at the state of exploitation of the Internet by learners in completing their project work, to analyze their perception towards using the Internet and its usefulness, their participation, and their level of Internet literacy.

To begin with, this research indicates that the percentage of students who make use of reading materials in store on the Internet is undeniably higher than the percentage of students who rely on offline reading materials such as books, journals, and educational magazines. This could be that these students realize by surfing the Internet, the amount of information that they can get is endless and searching for offline reading materials might be time consuming.

This research also looks at the differences of students' experience in using Internet before and after the project work given to them. It is clearly noted that there is an increasing number of frequency in the usage of the Internet among both Mainstream and SPACE students. The most obvious increase can be seen among Mainstream students because upon receiving the project works, they have a solid purpose while surfing the Internet compared to before they are given the project. For SPACE students, they are already frequent users of the Internet before they are given the project. It is mainly because most of SPACE students are currently working and they have another reason in using WWW besides for education.

In addition, most of the respondents, both mainstream and SPACE students, surf the Internet mainly for educational purposes and very few of them use the Internet for business purposes. It is because most of undergraduate students do not have the required skills, time, and fund to do task like online shopping compared to tasks like downloading webpage and saving it to hard disks.

Apart from that, the research conducted shows that most of the students have a very positive outlooks towards the usage of the Internet and this is very good since they can widen their knowledge by the availability of information in almost every discipline of study. However, most of them also think that the abundance of reading materials on the Internet overwhelm them. As a result, it is a tedious job for them to select a good reading material. In addition, to differentiate between good and bad ones required a specific skills and also experience. In spite of this particular pitfall, all of the respondents involved in this research think that the Internet is useful for their project work.

Besides using well-known search engine like Yahoo and Google, students have options or choices to get quality reading materials from online databases that has been subscribed by UTM and can be easily retrieved from Perpustakaan Sultanah Zanariah (PSZ)'s official website. It is a relief to know that a large number of respondents are aware of this facility offered by university. This may be due to the classes offered by PSZ to introduce the library and its facilities to all first year students.

Internet literacy among respondents has also been surveyed. The levels of confidence shown by respondents are really excellent since only less than one-fifth of the respondents felt not confident in using the Internet. It is because most of them are already equipped with necessary skills especially in sending and receiving emails to using chat rooms and instant messaging software. They were also besides entirely comfortable in doing typical tasks like using search engine and downloading files.

This study indicates that UTM students depend on online reading materials to complete their project work for English for Academic Communication subject due to easy accessibility of the Internet on campus. In addition, all UTM students have a positive perception towards using the Internet where they think that it is useful for them in completing their project work. However, the findings suggest that SPACE students are more active in using Internet both prior and after the project work since they are working and thus have more reasons to use the Internet both for educational and professional purposes.

The result of this study indicates that nowadays, students have already empowered a sense of apprehension that WWW offers abundance of information on literally every subject especially those that are related to their study. The information is regularly updated compared to books or any written materials where the authors do not have the opportunity to do so. Thus, more UTM students come to think that Internet as one of the learning tools that they can use throughout their study.

However, the most important limitation of this research lies in the fact that it cannot be generalized to other population since it only focuses on students from UTM. The same study needs to be conducted with students from other universities to see if there are any similarities in the level of dependency on using the Internet as their source of information and also on students' perception on the usefulness of WWW as a learning tool for their project work. Apart from that, the result of this study is only applicable for

students who are completing a project for Academic Communication subject and cannot be generalized to those who have not taken the subject yet.

Based on the findings and conclusion of the study, the following are several recommendations to be considered for these parties:

1. PSZ

- a. Other than having classes for new students on facilities offered by the library, PSZ should also offer classes that can train these students in using search engine. This class should teach the participants on how to filter information from the web and how to choose a good online reading material.
- b. PSZ should extend their working hours on weekends and during semester break. The library should remain open during the nights of every weekend and use the same working hours during semester break. This may allow students who are working during the day to spend some time during the night at PSZ to make use of the Internet facility there.

2. UTM

- a. UTM should provide more wireless area where students can access the Internet anytime and anywhere using their own laptop without having to worry about closing time. The place should be accessible at an unlimited hour.
- b. All students' residences should be equipped with Internet connection so that they can access the Internet for their reading materials whenever they like. This is especially benefiting those who do not own a laptop or a

transportation to travel to places that has Internet connection when they need to use it.

### 3. Students

- a. Students should upgrade themselves in terms of acquiring Internet skills that are not taught in classroom. For example, students should learn how to start and maintain a blog that can be used to share information, ideas, and opinions with someone who has similar interest and beliefs. Quality information can also be found here as a result of recommendation from others.

### 4. Faculty

- a. Each faculty in UTM has its own computer lab. However, the lab is used only for teaching purposes. Students should be allowed to use the lab facility available after classes especially after working hours. This allows students to make use of specific software installed on the computers in faculty's lab which cannot be found in the library's computers.

For future research, it is recommended that a study should be conducted to investigate the use of the Internet among UTM students during their final year. It is because this research only looks at the use of the Internet in completing a project work for a certain subject. Thus, the new research will look into the use of the Internet in general by the respondents for the past three years spent at UTM.

Besides that, it is recommended that the same study should be carried out on students from other universities to see whether there are any differences and similarities in the level of dependency on using the Internet as their source of information and also on students' perception on the usefulness of WWW as a learning tool during their study.

## BIBLIOGRAPHY

- Anandarajah, M; Summins, C; Igbaria, M. 2000. An exploratory investigation of the antecedents and impacts of Internet usage : An individual perspectives. *Behaviour and Information Technology*, 19, 1, 69-85.
- Badrul, H.K (ed). 1997. Web-based Instruction. Educational psychology publication. Englewood Cliffs, New Jersey.
- Barab S. A & Duffy, T. M. 2000. From practice fields to communities of practice. In Jonassen & Land (eds). *Theoretical Foundations of Learning Environments*.
- Bilal, D. 1998. Children's search processes in using WWW search engines : An exploratory study. Proceeding of the 60<sup>th</sup> Annual Meeting of the American Society for Information Science, 34, 45-53.
- Boettcher, J & Conrad R. (1999). Faculty guide for moving teaching and learning to the Web. CA: League for Innovation in the Community College.
- Bonk, C.J & Cunningham, D.J.1998. Searching for learner-centered, constructivist, and Sociocultural components of collaborative educational tools. In Bonk & King. *Electronic Collaborators*. New Jersey : Lawrence Erlbaum Associates Publishers.
- Bonk, C. J & King, 1998. *Electronic Collaborators*. New Jersey : Lawrence Erlbaum Associates Publishers.
- Bostock, S. 1997. Designing Web-based instruction for active learning. In Badrul. *Web-based Instruction*. Education psychology publication Englewood Cliffs, New Jersey.
- Bruce, C & Candy, P.2000 ( eds). *Information literacy around the world: Advances in Programs and Research*. Riveria : Charles Stuart University Press.
- Bruner, J. 1966. *Toward a theory of instruction*. Cambridge, MA : Harvard University Press.
- Bullen, M. 1998. Participation and Critical Thinking in Online University Distance Education. *Journal of Distance Education*. 13, 2, 1-32.
- Candy, P. 1998. On the attainment of subject matter autonomy. In Boud, D (ed). *Developing Student Autonomy in learning*. Kogan Page: London.



- Chikering,, A. W & Gamson, Z.F.1987. Seven principles for good practice in undergraduate education. *AAHE Bulletin*, 39, 7, 3-7.
- Dalgeish & Hall. 1999. Undergraduates' experience of using the WWW as an information resource. *Innovation in Education & Training International*, 36, 4, 334-345.
- Dinet, J; Minquett, P; Nissen, E. 2003. An exploratory study of adolescent's perceptions of the Web. *Journal of Computer Assisted Learning*, 19, 538-545.
- Di Viesta, F. 1987. The cognitive movement and education. In Glover & Ronning (eds). *Historical Foundation of Educational Psychology*.New York : Plenum Press.
- Dupuis, E. A. 1997. The information literacy challenge : Addressing the changing needs of our students through our programs. In Martin, L.E (ed). *The Challenge of Internet Literacy : Instruction-Web convergence*. New York : Haworth Press.
- Eraut, M. 1991. *Education and the Information Society*. London : Cassell.
- Ford, N; Miller, D; Moss, N. 2001. The role of individual differences in Internet searching : An empirical study. *Journal of the American Society for Information Science & Technology*, 52, 12, 1049- 1066.
- Fosnot, C. T. 1996. *Constructivism ; Theory, Perspective, and Practices*. New York : Teachers College Press.
- Gerlach, J.M;. 1994. Is this collaboration? In Bosworth & Hamilton (eds). *Collaborative Learning : Underlying Processe and Effective Techniques : New Directions for Teaching and Learning*. San Francisco, CA : Jossey – Press.
- Greeno, J. G.1997. On claims that answer the wrong questions. *Educational Researcher*, 26,1, 5-17.
- Guile, D. 1998. *Information and Communication Technology and Education*. Institute of Education, University of London.
- Heimrath & Goulding. 2001. Internet perception and use : a gender perspective. *Program*, 35,2, 119-134.
- Hirsh, S. G. 2000. Childrens' relevance criteria and information seeking on electronic resources. *Journal of American Society for Information Science*, 50, 14, 1265 – 1283.

- Honebein, T; Duffy, T, & Fishman, B. 1997. Constructivism and the design of learning environments : Contexts and authentic activities for learning. Available : <ftp://ithaca.icbl.hw.ac.uk/pub/nato-asi>.
- John, B & R, McClintock. 1995. An interpretation construction approach to constructivist design. In Wilson (ed). *Constructivist Learning Environments : Case Studies in Instructional Design*. Educational Technology Publications, Englewood Cliffs, NJ, USA.
- Jonassen, D.H & Land, S. M. 2000. *Theoretical Foundation of learning environments*. New Jersey: Lawrence Erlbaum Associates Publishers.
- Jonassen, D; Dyer, D; Peters, K; Robinson, T; Harvey, D; King, M; Loughner, P. 1997. Cognitive flexibility hypertexts on the Web : Engaging learners in meaning-making. In Badrul. *Web-based Instruction*. Education psychology publication Englewood Cliffs, New Jersey.
- Lantolf, J.2000. *Sociocultural Theory in Second Language Learning*. Oxford : Oxford University Press.
- La Velle, L & Nichol, J. 2000. Editorial : Intelligent information and communication technology for education and training in the 21<sup>st</sup> century. *British Journal of Educational Technology*, 31, 2, 99-107.
- Leloup, J & Ponterio, R. (2000). Enhancing Authentic Language Learning Experiences Through Internet Technology. *ERIC Digest*.
- MacFarlane, A. 1995. Future patterns of teaching and learning. In Schuller, T (ed). *The Changing University?* Buckingham : SRHE and Open University Press.
- Mayers, R. 1992. Cognition and instruction : Their historic meeting within educational psychology. *Journal of Educational Psychology*, 84,4, 405 – 412.
- Mayers, R. 1996. Learners as information processeors : Legacies and limitations of educational psychology's second metaphor. *Educational Psychologist*. 31, 3, 151-161.
- Pachler, N. 1999. Theories of learning and ICT. In Leask & Pachler (eds). *Learning to Teach Using ICT in the Secondary School*. London : Routledge.
- Pickering, J. 1995. Teaching on the Internet is learning. *Active Learning*, 2, 9-12.
- Pollard, J & Tann, D. 1993. *Reflective teaching in Schools : a Handbook for the Classroom*. London : Cassell.

- Reid, J; Forrestal, P; Cook, J. 1989. Small group learning in the classroom. Portsmouth, NH : Heinemann.
- Relan, A & Gillani, B. 1997. Web-based instruction and the traditional classroom : similarities and differences in Badrul. Web-based Instruction. Education psychology publication Englewood Cliffs, New Jersey.
- Rudduck, J & Flutter, J. 2000. Pupil participation and pupil perspective : carving a new order of experience. *Cambridge Journal of Education*, 24,2, 197 – 211.
- Soloway, E; Guzdial, M; Hay, K.1994. Learner-centered design : The challenge for HCI in the 21<sup>st</sup> century. *Interactions*, April, 36-48.
- Soloway, D; Jackson, S; Klein, J; Quintenna, C; Reed.J. 1996. Learning theory in practice : Case studies of learner-centered design. In *CHI '96 Proceedings : Human Factors in Computing Systems : Common Ground*, 3, 189-196.
- Tanner, L. 1997. Dewey's laboratory school : Lessons for today. New York: Teachers College Press.
- Teeler, & Gray, . 2000. Use the Internet in ELT. Essex. Pearson Education Limited.
- Wadsworth, B. 1989. Piaget's Theory of Cognitive and Affective development. White Plains, NY : Longman.
- Warschauer, M & Kern, R. 2000. Theory and practice of network-based language teaching : Introduction. In Warschauer & Kern. Network-based Language Teaching : Concept and Practice. Cambridge : Cambridge University Press.