Abstract

Online social networking refers to social network sites such as Facebook, Twitter, LinkedIn, Meetup, Tribe and MySpace. Since the inception, the number of online social networking is being created rapidly with many sophisticated features being developed ever since. The Facebook has gained much popularity among the public mainly for interactions as well as for exchanging information. This study intends to investigate the information retrieval that occurs in the Facebook platform and if the process of retrieving information on the Facebook support academic performance. Fifty nine adult learners participated in this research.

Keywords: Information retrieval; academic performance; self-directed learning; Facebook

1. Introduction

The rapid development of computer technology particularly the internet has brought many changes to the Malaysian education system as to meet the current demands and challenges of globalization. The technological changes make teaching and learning become more liberalized. Before this, the teacher and student relationship occur through the face to face meetings but when computer technology was integrated in the education system the teaching and learning is affordable done in a virtual environment.
In addition, the creation of various technologies gave the educators more choices as what computer technology to be used in their teaching. In relation to that, internet usage has made the teaching and learning process mainly to be more effective and efficient. As in line to that, the Malaysian education system established the Advanced Research Integrated Network/Academic (NETS) Project in 1994. This is a project to improve the social-economic mainly in areas of education and health within the country partly in the use of computer technology. This was followed by the establishment of the Bestari schools in 1998 by the Ministry of Education. This is part of the government initiatives and efforts towards promoting the use of technology in the Malaysian administration and education system. Eventually this will signify the importance for future communities to be equipped with knowledge and skills which is relevant to the new developments of the world in terms of learning tools capabilities.

Online social networking is the current internet technology. It is possible in the workplace, home, schools, universities, colleges and just about anywhere with the internet accessibility. It is said to have positive and negative impact on the users. However, there are some research done in Malaysia on the benefits of online social networking for knowledge sharing and academic performance (Oye, Adam and Nor Zairah, 2012). Mahajan (2009) refers online social networking to the information of a community on the internet which facilitates the users to interact or share views for a common purpose. The finding by Mahajan fits the study conducted by Din and Haroon (2012) regarding the sharing of knowledge over Facebook. Their findings showed that the Facebook users were more willing to share on common objectives but are reluctant to share information or knowledge that are classified as private or personal.

Both researchers emphasize that future research need to be done to explore in depth the benefits of online social networking towards teaching and learning as it is not to be neglected from an academic perspective. It is so as the platform enable users to create, store and manage information to be shared with others for learning purposes. It is a powerful online tool if used correctly with the intended used. Therefore this study will explore three main variables, which are academic performance, information retrieval and self-directed learning readiness.

2. Objective of the Research

Below is the main research question for this study that states:

- Is there a relationship between information retrieval and academic performance among users of the online social networking mainly the Facebook users?

In addition, there are other specific questions for this study namely:

- Is there a relationship between information retrieval and the level of self-directed learning?
- Is the online social networking platform such as the Facebook can be a useful mechanism for information retrieval?
- What is the level of self-directed learning among the adult learners?
- What is the effect of the level of self-directed learning towards information retrieval and academic performance?

3. Literature Review

This section will describe the key elements related to the study. Information retrieval is generally an activity of information searching to meet the demands of an individual. This is a generic definition. Rijebergen (1979) viewed the term information retrieval as a wide, often loosely-defined term and presented in a particular manner (Lin, 2006). The academicians and researchers as well as students should viewed information retrieval as a very important activity, and usually it is done almost daily to get relevant information for their task completion. As parallel to the use of information technology such as
internet in daily lives, the academicians, researchers and students retrieve information and data from the internet services as they can retrieve information from several different sources. This information may include reports, e-books, historical documents, maps, articles from reviewed journals, and achieves documents.

Kobayashi and Takeda (2001) stated that the growth of the internet and technologies are useful for information search and retrieval on the Web and it is more than just a means of seeking information as claimed by Adam and Nor Zairah (2011). Accordingly, Facebook is an online social networking tool that can be used for the said purpose. The current scenario in the virtual world, people meet people through the internet such as the Facebook services. In fact, it is one of the most popular online social networking in the world. Facebook is a modern approach of information retrieval where the system acts like a database, or the digital library mostly due to its features. On that note, Facebook is able to provide useful information retrieval application of representing, storing as well as organizing information for later accessed.

Meanwhile, student’s academic performance has become a primary focus of today’s education environments and it is an area of national concern. As in the case of Malaysian education system, many initiatives have been taken particularly in integrating technology in its education as to reap the benefits of the technology. The setting up of the multimedia super corridor project in the 80’s by the Malaysian government enhances the use of information technology to the level whereby computer technology is the necessity in the country’s education classroom. In general, previous literature review suggests that educational technology has demonstrated a significant positive effect on academic performance if it is well planned. The successful mastery of academic content and learning effectiveness, once viewed entirely as the learners' responsibility, is now considered a shared responsibility between three major groups: the student, the instructor, and the educational institution.

The Facebook provides a modern approach of information retrieval from a computer through the use of internet via online social networking platform. From websites, users are able to collect information from other users as well as create a virtual environment to share and exchange information. This will increase participation socially and stimulate learning online. This may due to its features that is able to offer the users to do searching, storing, retrieving as well updating information whether for the purpose of knowledge sharing or for personal use. Thus, it can be considered as an online personal database. However, information is presented in “bit size chunks” as cited by Thom (2001) and Leng (2006). Consequently, Facebook now has gain tremendous popularity, and has become the contemporary method of finding information due to the many features that have attracted users from all over the world. As an adult learner it is expected them to be able to digest information of the “bit size chunks” that they obtained in the Facebook platform. It is hope that the Facebook can be used more efficient as to support their decision making in relation to their learning.

Mark Zuckerberg and his teams in 2004 the founder of Facebook website that makes its’ presence a global phenomena. According to Alexa.com (2012), Facebook website is the second most popular online social networking in the world. It further reported that the overall population of internet users tends to be users who browse from school and home. This would mean that Facebook services not only for socially used but also used for learning platform. This shows that the role of Facebook as a platform to connect people, to work and study should deserve an attention as a positive step to reap its potentials. However, a study that have been conducted pertaining the association of Facebook and the academic performance by Kirschner and Karpinski (2010) on the usage of Facebook against academic performance as to measure the Grade Point Average (GPA) and hours spent studying per week using the Facebook services showed otherwise. The study also revealed that the usage often being carried out simultaneously with other study activities. Kirschner and Karpinski (2010) in their findings posed that the Facebook services users tend to having lower GPAs and they spend fewer hours per week studying than non-users. It is good to note that
the study was conducted on the young adult of the new generation learners that make use the myriads of electronic devices at their disadvantage. They are capable of using the computer technology but not really using it efficiently (Bullen et al., 2008).

In spite of the study by Kirschner and Karpinski (2010) on academic performance, Ellison et al (2007) researched on the benefits of social network sites. They documented the benefits, which include the following:

- Users use the social network sites for interaction. An example would be the Facebook.
- Users are enabling to profile themselves online.
- Social network sites provide virtual community based on common interest and issues.
- Social ties are supported and new connections can be made.

Apparently, these benefits facilitate societal relationship among the users that bring about social interaction. Since the online social networking is to allow individual to share information, a first-hand information able to be reckoned for one’s purpose. Thus, to be able to embrace, understand and to utilize this online tool in learning activities would be a great advantage to the users with responsibility.

The second variable that is being studied here is self-directed learning. Knowles (1975) defined self-directed learning as a process in which learners take the initiative for analysis and diagnosis of their learning needs, formulation of relevant personal learning goals, identification of how to achieve them, and reflection of their achievement. He further added that an adult learner is an individual, who performs roles associated by our culture with adults such as spouse, parent, worker and responsible citizen. They were also individuals who perceived themselves as to be responsible for their own life.

In general self-directed learners are learners who are in charge of their own learning. They are in control of their learning, they are self motivated as well as they are responsible towards their learning processes. Studies in many decades had clearly demonstrated that adults prefer to assume some responsibility for their own learning (Hiemstra, 1996; Smedley, 2007). Lairds (1985) recognizes the maturity of adult learners which will enhance their reason for learning and thereby can decrease the said barrier. For adults, experience is an important element in their learning process (Boud and Millier, 1996). Other factors that contribute to successful learning include self-directed learning, critical reflection and learning how to learn. In theory, self-directed learning is stated as having positive relationship with academic performance. In the early 1990’s research by Hariman (1990), Anderson (1993), Darmayanti (1994) and Horng (1995) found that there are positive relationships between self-directed learning and academic performance.

In the year 2000, Haggerty studied self-directed learning among his biology students. He also found that self-directed learning and academic achievement is related. Hiemstra (2008) says that much research on self-directed learning among learners are concentrated on the impact of the technology such as web based learning and online learning has on teaching and learning.

Haron (2009) studied the adult learners who use the web for learning. Haron’s research focused on the learners in Malaysia and found out that self-directed learning and academic achievement is positively related. Her study was on the impact of internet learning and how technology can facilitate learning.

4. Research Methodology

This study adopted a descriptive quantitative methodology. It was conducted between the months of May to August 2012. A questionnaire was designed to answer the research questions on the research variables. There were thirty two items in the questionnaire designed to measure the research questions.

There were three main variables to be tested namely: information retrieval which is the independent variable, self-directed learning readiness which is the mediating variable and academic performance as the dependent variable. Fig. 1 below describes the research framework.
The participant for this study is fifty nine students. The respondents of this research are the Facebook users and be the unit of analysis of this study. They are adult learners attending the online distance learning in University Technology MARA, Selangor, Malaysia with certain years of working experience and around twenty eight years of age.

The sampling method was based on the simple random sampling. Simple random sampling is a basic type of sampling, since it can be a component of other more complex sampling methods. The principle of simple random sampling is that every object has the same possibility to be chosen. This random sampling method was exercise by these protocols.

- Identifying the final students of the diploma course in public administration in University Technology MARA, Selangor, Malaysia. The course is taught through the online learning mode.
- Obtained respondent's name list and identify those with the Facebook account. Only those with the Facebook account are qualified to become respondents of this study.
- From the list, the researcher only choose those with the student number that ends with number “5” to become the unit of analysis.

A reliability analysis was conducted on the instrument. A measurement is reliable if it reflects mostly true score, relative to the error.

The instrument was piloted to thirty students in late July 2012. The instrument has thirty two items, designed to generate data according to the research questions. The Cronbach’s alpha coefficient was computed to test the reliability of the questionnaire. The alpha value of the three construct is high which means that the instrument is reliable and valid. Table 1 shows the reliability of the construct variables used in this study.

![Fig.1. Research framework](image)

Table 1. Reliability analysis

<table>
<thead>
<tr>
<th>Construct</th>
<th>No of Items</th>
<th>Alpha Value (α)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent variable - Information Retrieval</td>
<td>27</td>
<td>0.95</td>
</tr>
<tr>
<td>Dependent Variable - Academic Performance</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>Mediating Variable - Self Directed Learning</td>
<td>5</td>
<td>0.83</td>
</tr>
</tbody>
</table>
5. Findings

The data analysis generated much significant findings. The findings are reported in four subsections which are:

- The profile of the respondents
- The correlation between information retrieval and academic performance
- Ability of the Facebook to support information retrieval
- The level of self-directed learning readiness
- The effect of the mediating variable (self-directed learning).

The five sections are explained as the following:

5.1. The profile of the respondents

Student’s profile helps identify the students’ background, their working experience and their learning outcomes. In this study the profiles of the respondents are as illustrated in Table 2. All the respondents are working adult learners, with the mean of age as twenty nine years old. The mean for working experience is seven years, and the average academic performance is 2.8 point, as measured through their CGPA (Cumulative Grade Point Average).

Table 2. Respondents profile

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Std deviation</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>59</td>
<td>3.88</td>
<td>29</td>
</tr>
<tr>
<td>Working Experience</td>
<td>59</td>
<td>.72</td>
<td>7</td>
</tr>
<tr>
<td>Cumulative Grade Point</td>
<td>59</td>
<td>4.08</td>
<td>2.8</td>
</tr>
<tr>
<td>average(CGPA)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.2. The correlation between information retrieval and academic performance

There is a significant correlation between information retrieval and academic performance as shown in Table 3. The analysis shows that there is a significant relationship between information retrieval and academic performance at the .002 value. This is an important finding in this study.

Table 3. The correlation between Information retrieval and academic achievement

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Pearson Correlation</th>
<th>Cumulative Grade Point Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFVariable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>1</td>
<td>.390</td>
</tr>
<tr>
<td>N</td>
<td>59</td>
<td>59</td>
</tr>
<tr>
<td>Cumulative Grade Point Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>.390</td>
<td>.002</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>59</td>
<td>59</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
5.3. Ability of the Facebook as a mechanism to support information retrieval.

In this category there are twenty seven items designed for the above research objectives. These items measured the perceptions and experiences of the users on Facebook as a mechanism to support information retrieval. The mean for information retrieval variable category is 96.2. It shows that the information retrieval variable is very useful for Facebook users.

Meanwhile the mean for information retrieval variable is shown in Table 4 and the scale of calculation is in Table 5.

Table 4. The mean score for information retrieval variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information retrieval</td>
<td>59</td>
<td>96.2</td>
<td>14.02</td>
</tr>
</tbody>
</table>

Table 5. The scale to measure the ability of the fb to support information retrieval

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Score</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Retrieval</td>
<td>135–90</td>
<td>Very Useful</td>
</tr>
<tr>
<td></td>
<td>89–44</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Below 43</td>
<td>Poor</td>
</tr>
</tbody>
</table>

5.4. The level of self-directed learning readiness

The level of self directed learning readiness among the adult learners generated a mean score of 18. It indicates that the respondents have a high level of self-directed learning.

Table 6. The level of self-directed learning

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information retrieval</td>
<td>59</td>
<td>96.2</td>
<td>14.02</td>
</tr>
</tbody>
</table>

Table 7. The level of self-directed learning readiness among the adult learners

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Score</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directed Self Learning</td>
<td>25-16</td>
<td>High level of SDL</td>
</tr>
<tr>
<td></td>
<td>15-8</td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td>Below 8</td>
<td>Poor/weak</td>
</tr>
</tbody>
</table>
5.5. The effect of the level of self-directed learning readiness

The objective of this question here is to measure the effect of self-directed learning readiness on the relationship between information retrieval and academic performance.

The step to analyze the mediating variable is by using the regression analysis. The protocols of the analysis is by measuring the relationship between the independent variable (IV) and the dependent variable (DV), next is the relationship between the IV and the mediating variable (MV), the relationship between mediating variable (MV) and dependent variable (DV).

The values of the R square for model A, B and C are .152, .620 and .091. Model B which is the measurement between the IV and the MV is a better model than model A and model C as the value is above 0.6.

However, the three models are significant with the p<0.001.

The Beta (B) values for the three models are .390 for model A, .787 for Model B and .301 for model C. The score for model B is high, therefore it indicate that self directed learning (MV) has high effect of information retrieval (IV). Model A and model C shows a moderate score. Model A with the score of .390 between the IV and DV shows that there is a moderate effect between the two variables. Model C with the score of .301 also indicate a moderate effect of the MV which is self-directed learning towards the DV which is academic performance. Table 8 illustrates the findings.

Table 8. Regression analysis for mediating variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model A</th>
<th>Model B</th>
<th>Model C</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV + DV</td>
<td>Beta (B) Value</td>
<td>Beta (B) Value</td>
<td>Beta (B) Value</td>
</tr>
<tr>
<td>Information retrieval</td>
<td>390</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic achievement</td>
<td></td>
<td>.787</td>
<td></td>
</tr>
<tr>
<td>Self directed learning</td>
<td></td>
<td>301</td>
<td></td>
</tr>
<tr>
<td>DV</td>
<td>152</td>
<td>629</td>
<td>0.091</td>
</tr>
<tr>
<td>R2</td>
<td>10.205</td>
<td>92.87</td>
<td>5.675</td>
</tr>
<tr>
<td>Sig of F</td>
<td>0.002</td>
<td>0.000</td>
<td>0.02</td>
</tr>
</tbody>
</table>

6. Discussion

This section is focusing on the discussion of the study as follows:

- The profile of respondents

The profile of the respondents shows that the respondents are matured student, with at least seven years of working experience and most of them are about twenty eight years old. This data shows that these students have much working experience. Most working adults have higher levels of self-directed learning readiness (Guglielmino,1976). Working adults are very responsible towards their learning (Knowles,1976). They are very independent and have their own views and perceptions on learning and teaching.

Therefore understanding their profile and characteristics are important as their learning capabilities are unique as they bring vast experiences from their workplace into the classrooms. Their views and perceptions on information retrieval activities in the Facebook is important as it will give new insights on
how the Facebook can be used as a tool for teaching and learning in classrooms as well as a tool for training in the workplace.

**Working adults have limited time to study, or to do “searching” or information retrieval in the libraries.** They prefer to retrieve information through digital libraries or virtual libraries to access e-resources such as online databases and e-books from the internet. Therefore, the study on information retrieval and academic performance is important in context of adult learners for the reason given earlier as to find ways to enhance their learning process.

- The correlation between information retrieval and academic performance.

The findings showed that there is significant correlation between information retrieval and academic achievement. It is too early to generalize the findings as the sample size is small. The assumption that can be made is that the adult learners retrieve information for their learning. Therefore, it can create positive effects on their academic performance.

One of the main benefits of online social networking is the ability to retrieve information from many sources and experts (Din and Haron, 2012). Most students need information and study materials for learning such as e-books, e-modules, articles from journals. In classrooms, students are instructed to write academic papers that require students to “search” for relevant information, data, and knowledge as an instruction for complete submission. In addition, another benefit is to have discussions with experts in the Facebook as well as getting support from learners from other universities. The information retrieval process through the Facebook can save time and cost for the users. The digital library and the virtual library allow students to search for information without having to be physically present in the library.

Awareness about the benefits of Facebook is not well discussed and made known to the Malaysian public. Group learned discussion can happen in the Facebook if the users are aware of the benefits of such online social networking platforms. Most of the Facebook users only focus on interacting with friends, chatting, and finding long-lost friends (Din and Haron, 2012).

- Ability of the Facebook to support information retrieval.

The users rated the ability of the Facebook to support information retrieval as “very USEFUL.” There has been much write up and research on the positive and negative effects of the Facebook. Most important is that the users must be in control of what they do on the Facebook, secondly, is how efficient they retrieve information, and lastly, what type of friends that they add in the Facebook. The Facebook has its benefits, has good tools, and abilities, but the learners must be in control and realize the potential in its usage.

- The level of self-directed learning readiness

The findings showed that the adult learners have high levels of self-directed learning. This is parallel to the findings of Hiemstra (1988) that most adult learners demonstrate high levels of self-directed learning characteristics. Students who are self-directed will have much initiative to find information themselves, they are able to study independently and search for additional learning materials and information by themselves. Guglielmino (1976) says that self-directed learners are people who “love to learn”. Therefore to instill attitude of “love to learn” and instill the ability to be able to self-direct, the learning environment must be designed and created to be able to support self-directed learning. The tools and technology too must be user friendly, easy to use, and have much information that can support information retrieval as well as self-learning.

- The effect of the mediating variable.

This study found that the mediating variable (self-directed learning) has a strong effect of the independent variable which is information retrieval. It refers to learners’ who are self-directed will use the Facebook platform for information retrieval.
7. Conclusion

As in conclusion, the main contributions of this study are:

Firstly, this study proved that there is a relationship between the variable “Information Retrieval” and “Academic Performance”. Secondly, the variable of “self-directed learning” has a strong positive effect on Information Retrieval. Thirdly, the Malaysian adult learners have a good level of self-directed learning. In fact, the study shows that the Malaysian learners have high level of self-directed learning. Fourthly, this study shows that the Facebook platform can be learning and teaching tool. In addition, discussions and information retrieval can be conducted in the Facebook.

Although there are still much that needs to be done, the study generated some important findings in the field of education in relation to online social networking. Academicians and researchers can use this study’s findings to study in depth in the area of online social networking and academic performance especially in the Malaysian context.

The Facebook technology can be used for learning if the users are aware on the benefits of the Facebook and how the Facebook can be utilized as a tool for learning. Guidelines on “how to use the Facebook as a learning tool” should be developed. This is due to the fact that online social networking such as Facebook as the current social technological culture and apparently, the next generation learners in the coming future with regards to computer technology application.

The Malaysian public should be educated through programs on the benefits and weakness of the online social networking technology particularly the Facebook. This is important as there are millions of Facebook users in the country. It was reported that 12 million Malaysian users of Facebook in 2011 (Tawie, 2011) and today the number is increasing close to 13 million (Socialbakers.com, 2012). It was also reported that the penetration of population is 49% in the country and the user age distribution is around 18 – 24 years that consists of 34% of the population followed by 25 -34 years that take up another 29% of the total population. However, it is good to note that the report showed that 9% is allocated for users ages from 45 – 54 while 1% each for ages 55 -64 and 64 – above. This showed that how much Facebook have affected the Malaysian activities and their daily lives. Therefore, as the Facebook can become a tool for education, proper strategies need to be outlined and further discussed.

Learning environments and the Facebook technology must be created, developed and designed to facilitate self-directed learning so that students can retrieve information and learn more effectively, and this is will definitely improve their academic performance. Self-directed learning is an important element that must be constantly researched, discussed in depth for continuous improvement of students’ attitude towards learning, improvements of the educational tools and technology and improving the instructor’s skills and roles as well as refining the institution’s role.

There are some limitations in the study. The main limitation is the sample size which is small. A bigger size might generate different outputs. The second limitation is the design of the research is based solely on the quantitative methodology. A qualitative approach can generate more in depth understanding and knowledge of these research objectives.

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