INFORMATION BEHAVIOR AND TECHNOLOGY AFFINITY AMONG HIGHER INSTITUTION LEARNERS IN BORNEO

Nurul MuizzahBinti Johari
muizjohari91@gmail.com

ABSTRACT: This study aims to provide an understanding of information behavior with technology based on gender. It also to investigate the relationship between information behavior and degree of technology affinity. This research has been conducted quantitatively and using survey to gain data from participants. Participant are selected randomly across Universiti Malaysia Sarawak, Sarawak. The instrument are adopted from Mills, Knezek, and Wakefield (2013) which taking interest into information behavior (ICTL) as well as technology affinity. The reliability for Information and Communication Technology Learning (ICTL) is 0.835 while for Technology Affinity Scale (TAS) is 0.831. Statistical Analysis for Social Science Package (SPSS) are used to analyze the data obtained through Independent T-test and Pearson Correlation test. Findings indicate that no significant difference found for understanding of information behavior with technology based on gender. While, another finding indicate that there is no significant relationship between information behavior and technology affinity. Improvement suggested obtain from the findings are providing understanding on the types of information behavior possess by each learner and helps educator as well as learner to plan their teaching and learning session to promote better indulgent of the knowledge.

KEYWORDS: Information behavior, Technology affinity.

INTRODUCTION

Malaysia Education Blueprint 2013-2025 has been constructed to highlight and guiding our education system. Starting 2015, new education plan has been designed for Higher Education Institution. The system emphasizing 10 shifts that aims to empower student's performance, attitude and aptitude as addressing the issues in education system.

The new blueprint, Malaysia Education Blueprint 2015 – 2025 has been established only for higher education purposes. There are 10 shifts which will be used to guide our education system. Those shifts are (1) holistic, entrepreneurial and balanced graduates, (2) talent excellence, (3) nation of lifelong learners, (4) quality TVET graduates, (5) financial sustainability, (6) empowered governance, (7) innovation ecosystem, (8) global prominence, (9) globalized online learning, and (10) transformed higher education delivery.

This research are govern from the ninth (9th) shift which to globalized online learning. It stated that currently, the integration of Internet into Malaysia culture are at 67% which make it the seventh highest penetration rate across Asia.

Information behavior are regarded as the attitude shows by users while using technology that categorized into information seeking and information searching. It has been categories into two types; information sharing and information seeking. The benefits by practicing information sharing are helps

Technology affinity is described as the measurement for level of engagement with technology devices in learning session. The level of engagement are immersed and continuous. Mills, Knezek, and Wakefield (2013) using the related instrument to search on the relationship between level of engagement and attitude toward learning. Nevertheless, demographic factor like gender has been taken out as one of the considerable factors to influence the attitude.

PROBLEM STATEMENT

Information said to acts as significant role in professional and personal lives and we are urge to continuously to take control of the information that needed for work, leisure, and everyday decision and errands (Bruce, 2005). Information behavior is a skill that needed especially for those who involve in academic field such as educator and learners. However, there are factors that hinder the skills to be developed. The factors are like poor internet connection, poor searching skill, lack of time, and so on. This need to be identified among undergraduate to enable suggestion to overcome the problem.

Research on information behavior has been done in Malaysia, nevertheless, the focus are on international students who chose Malaysia as their educational institution. Suraya Hamid and Sarah Bukhari (2015) has conducted a research on information seeking whereby the finding shows that international students that interact with online material, local students, fellow international peers, as well as local community helps them to overcome challenges encounter to study away from their home.

Technology Affinity Scale (TAS) is an instrument which has been constructed to accompany the instrument which used to identify the information behavior of selected participant. It comprised of two type of interactions, which are, immersed and continuous on.

As to date, there has been little research on information behavior and technology affinity done in Malaysia context. It is important that a cross sectional study to be conducted to study the information behavior and technology affinity of local student.

Research Objective

The objectives of this study are to;
(1) Identify the attitude toward learning with technology based on gender,
(2) Investigate the relationship between attitude toward learning and degree of technology affinity.
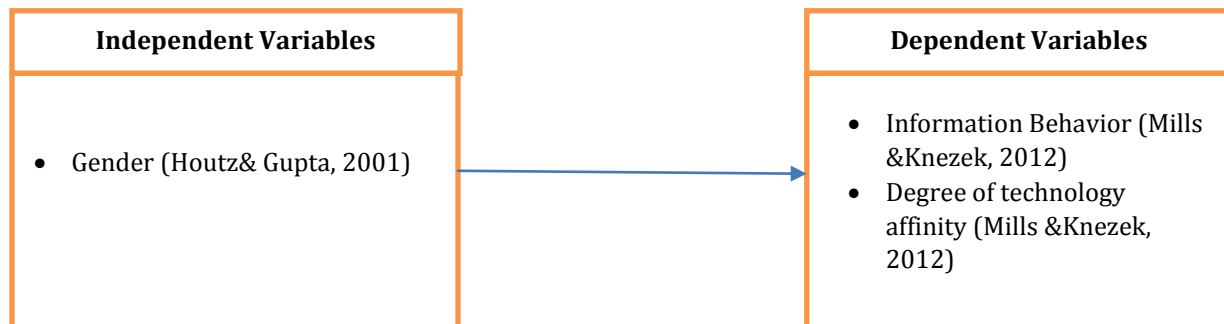
2.   Conceptual Framework

Independent Variables	**Dependent Variables**
• Gender (Houtz& Gupta, 2001)	• Information Behavior (Mills &Knezek, 2012) • Degree of technology affinity (Mills &Knezek, 2012)

Figure 1.1. **Conceptual Framework of the research**

The first objective for this study is expected to assist educator to plan their teaching and learning session through integration of technology into traditional learning setting. It using gender as medium for measurement on the behavior shown by participant in learning when using technology whether they tend to be more on information seeking or information searching. Instrument that has been introduced by Mills, Knezek, and Wakefield (2011) will be utilized to achieve the first objective. The obtained outcome from the first objective can help educator as well as learner in constructing and implementing instructional model in both formal and informal learning session.

As for the second objective, it is expected to focus on the relationship between attitude toward learning with technology and degree of technology affinity. Statistical test has been executed and the outcome can be used to establish the relationship needed. It can be used to help learner to plan their study which shown in previous research by Mills, Knezek, and Wakefield (2013) whereby it stated that learner with high positive attitude toward learning with technology are found to have higher technology immersion.

3. Literature Review

2.1 Information Behavior

Several models has been established related to information behavior. A model of information search are proposed by Kuhlthau (1993). This model are divided into seven stages; task initiation, topic selection, prefocus exploration, focus formulation, information collection, search closure, and start writing. It is an integration of some elements of feelings like anxiety, uncertainty, confidence and others where anxiety and stress can be anticipated at the early stage of the model.

Another model by Wilson (1996), stated an interdisciplinary which focusing on health information, advertising, economics, communication, as well as organizational behavior. Elements that included into the model are character or context, activating mechanism, and dominant variables.

Koh (2013) proposed a definition to a term; information-creating. It been explained as the technique that people create message, cues, and information content which can be utilized to fulfill the existing or potential information needs of the creator or other users. Then, Oh (2015) mentioned that another type of information behavior is information keeping. It has been defined as "the way people keep information in a physical or virtual location for a certain period of time for personal or organizational use". Evidence reported by Liu, Macmillan, and Timmons (1998) that learners with positive attitude toward using computer would have positive attitude toward learning.

2.1.1 Information Sharing

Talja (2002) viewed information sharing from a perspective of document retrieval. It can be seen as:
- Sharing information about relevant documents;
- Sharing relevant documents;
- Sharing information about the contents of relevant documents;
- Sharing information about new and efficient ways of finding relevant documents or information sources.

There are four (4) types of information sharing. Firstly, strategic sharing where the information sharing as a conscious strategy of capitalize on efficiency in a research group. Secondly, paradigmatic sharing that means

of forming new and distinguishable. Thirdly, directive sharing. It is a sharing process between teachers and students. Lastly, social sharing whereby information sharing is seen as a relationship and community building activity (Talja, 2002).

The advantages of information sharing has been elaborated by Alkubut, Kelle, Pawlowski, & Schneider (2009), it helps the community to enhanced information accuracy, resource and interaction in organization. Besides that, it also been mention that information sharing plays important roles for collaboration, cutting down cost and improved productivity, precision of information, complementing information for decision making, and enriched the alliance among government organization (Alkabut et al., 2009; Bigdeli, Kamal, & de Cesare, 2013).

Rafaeli and Raban (2005) mentioned that there are factors that act to promote or hinder sharing whereby it is depending on certain circumstances.

Table 2.1
Factors that promote or hinder sharing online and variable for further research (Rafaeli&Raban, 2005).

Factors that promote information sharing online	Factors that hinder information sharing online	Variables for research
Ownership	Public goods- free riding	Broadcasting vs. sharing
Personal benefit; self-identity / respect/ esteem	Diffusion of responsibility	Ownership / privatization
Prior acquaintance and similarity	Organizational culture and politics	Seeking vs. sharing
Prosocial transformation	Hierarchical organizational structure	Information vs. advice
Social facilitation	Competition	Validation of benchmark
Reciprocity	Selfishness	Cause or solution for information overload

2.1.2 Information seeking

Dervin (1983) mentioned information seeking is viewed as "a process of sense-making in which a person is forming a personal point of view". Reading upon this behavior often be linked to motivation, critical thinking, and learning theory (Weiler, 2005). Models regarding to information seeking behavior has been constructed. Krikelas (1983) emphasizes a model which consists of several steps; (1) perceiving a need, (2) the search itself, (3) finding the information, and (4) using the information. While Kakai, et al. (2004) defined information seeking as "an individual's way and manner of gathering and sourcing for information for personal use, knowledge updating, and development".

Besides that, Ellis (1987) conducted a research at Shell Research upon "person-centered" approach and "system-centered" approach which relate to information seeking behavior. Using qualitative interview, the outcomes has been listed as below (Ellis, 1987; Ellis, Cox, et. al., 1993; Ellis &Haugan, 1997):

Table 2.1
Information seeking behavior (Ellis, 1987; Ellis, Cox, et al., 1993; Ellis &Haugan, 1997).

Starting	User begin to seek information by for example, asking to knowledgeable colleague
Chaining	Following footnotes and citation in known sources
Browsing	"semi-directed or semi-structured searching"
Differentiating	Knowing the differences in information as a way to filter the amount of information gathered

Monitoring	Keeping updated
Extracting	Selecting and identifying the relevant material in an information source
Verifying	Checking the accuracy of information
Ending	End up and conclude through a final search

Research by CLN, Uche, and Ejiro (2015) stated that, there are factors that affecting the faculty members of Federal University of Petroleum Resources. The factors are poor Internet facilities, irregular power supply, poor searching skills, lack of time, not satisfied with the material in the library, and some of the participants choose others as their answer.

3. METHODS

This study has been done quantitatively and using cross-sectional design. Close-ended questionnaire are used to collect needed information. Students from Universiti Malaysia Sarawak (UNIMAS) has been chosen randomly to be as participants. Throughout the 7 faculties in the campus, out of 150 set of questionnaire, only 95 sets are useable for data analysis. The return rate is 63%.

3.1 Instruments

Two survey were adopted and used as medium for data collection; Information Communication Technology Learning (ICTL) and Technology Affinity Survey (TAS). Pilot test has been carried out to define the validity and the reliability of the instruments. For ICTL, the instrument initially used to seek on how students choose to interact with ICT tools in educational information seeking and sharing which been refined and validated in 2011 (Mills and Knezek, 2012). There are 15-items which distributed for each group (information seeking and searching).

Table 3.1
Items for Information Communication Technology Learning (ICTL)

Groups	Item numbers	Total Items	Cronbach's Alpha Value	
Information seeking	2,4,7,8,10,13,14	7	0.835	Good
Information sharing	1,3,5,6,9,11,12,15	8		

As for Technology Affinity Scale instrument, it focusing on measuring Internet related digital technology and mobile technology used. There are 22-items which adapted from Knezek and Mills (2011) which later been reduced to 19-items after some revision.

Table 3.2
Items for Technology Affinity Scale (TAS)

Type of Interaction	Item numbers	Total Items	Cronbach's Alpha Value	
Immersed	3,4,5,7,8,9,10,11,12, 13,14,17,18,19	14	0.831	Good
Always On	1,2,6,15,16	5		

4. RESULTS

An Independent T-test has been executed to test the first objective. Analysis on attitude towards learning with ICT based on gender, it reported that females (M= 3.87, SD = 0.399, n= 47) scores higher on attitude towards learning with ICT than males (M= 3.77, SD = 0.557, n= 48) with t (93) = -1.009, p>0.05. The mean

difference was -0.1005 and the 95% confidence interval around the difference groups means was -0.2984 to 0.0973. The null hypothesis is failed to be rejected. Thus, there is no significant difference in attitude toward leaning with ICT based on gender.

Table 4.1
Independent T-test

	T-test for Equality of Means				95% Interval Difference Lower	
	t	Df	Sig (2-tailed)	Mean difference	Lower	Upper
Information seeking	-0.827	93	0.410	-0.08815	-0.29978	0.12349
Information sharing	-1.055	93	0.294	-0.11292	-0.32544	0.09959
Attitude toward learning with ICT	-1.009	93	0.316	-0.10053	-0.10053	0.09734

Lastly, again, Pearson Product Moment Correlation test has been used for the next objective. The results indicates that there was a significant (p<0.005) and weak positive relationship (r = 0.388 based on Chua, 2006) between attitude toward learning with ICT and degree of technology affinity. Thus, the null hypothesis is rejected.

Table 4.4
Pearson Correlation (Technology affinity and Attitude toward ICT)

		Attitude ICT	Technology Affinity
Attitude ICT	Pearson Correlation	1	0.388**
	Sig (2-tailed)		0.000
	N	95	95
Technology Affinity	Pearson Correlation	0.388**	1
	Sig (2-tailed)	0.000	
	N	95	95

**Correlation is significant at the 0.01 level (2-tailed)

4.1 Limitation

Limitation of this research include a small and limited sample size of participants which originated from a university located in Kota Samarahan, Sarawak. The result might not presenting the whole population of higher education learners whereby the participants were selected randomly. Furthermore, the timeframe for the research to be completed are limited which only 3 months. Thus, longer time need to ensure the information obtained are valid and reliable.

5. DISCUSSION

Report on information behavior based on gender shows that male participants has dominated the information seeking group while female participants has dominated information searching group. This result is supported by Dubi and Rutsch (1998) where a study has been executed to examine the Internet search

behavior. It found that female are less likely linked to information seeking behavior because they are lack of self-confidence and felt less skilled to deal with the search engine when the described system as "too complicated". The result obtained as male participant dominating the outcome for information seeking are supported as male students tend to overestimate and female students are likely to underestimate their own abilities (Bannert&Arbinger, 1996; Copper & Stone, 1996).

However, Houtz and Gupta (2001) discover different result whereby there are significant differences in the way female and male rates themselves according to technology literacy. Males considered themselves to have higher technology literacy compared to females.

For second objective, it found out that there is no significant differences in degree of technology affinity based on duration of using social media are supported by Yellow Pages (2014) whereas, Facebook user tend to spend around 17 minutes for each time they log into the system. Typical user would spend more than 8.5 hours per week for that site. Another platform which gain their own popularity are Tumble and Pinterest.

Table 5.1
Degree of Technology Affinity

Degree of technology affinity	Count
Immersed	40
Always-On	53
Both	2

Future research need to explore more on the factors that affecting information behavior and increased the number of participants to ensure the result are valid and not bias to any categories. Besides that, this study can be conducted in another environment setting such as between public and private universities.

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