A Survey on Students' Preference in Knowledge Sharing Tools to Support Learning in Higher Education

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Abstract—**Knowledge sharing tools is among the technologies that play important role in institutions as it enables them to leverage knowledge management solutions. The aim of this study is to determine the preference of students in higher education toward Knowledge sharing tools to support their learning. A research questionnaire was used to collect data from the respondents whereby both online and offline were deployed. A total of 287 responses were analyzed using SPSS v20 in which descriptive statistic was used in data analysis. The outcome revealed majority of the students prefer features such as Search engine, Instant Messaging and e-mail, Online Group Discussion, Electronic Documents (e-books, journals, projects etc), Tutorials, and News and adverts of the Knowledge sharing tools higher than others. Similarly, Feedback, Video Conferencing, Blog, and Content/lesson creation have a significant role in sharing of knowledge. The least preferred features of Knowledge sharing tools are Help desk (care lines), Audio Conferencing, Web Conferencing, and Instructional games.**

Index Terms—**knowledge sharing tools, preference, student, university**

I. INTRODUCTION

Institutions across globe are in different stages of accommodating technological innovation in their respective institution aimed at enhancing and promoting knowledge, information dissemination, teaching and learning, and knowledge sharing. One of the technologies that play important role in institutions is knowledge sharing tools because it enables them to leverage knowledge management solutions.

With the capabilities of knowledge sharing tools in supporting universities in knowledge creations and disseminations, institutions are increasingly rebranding their knowledge sharing systems to cover a broad range of functionality. This paper examines the need for these knowledge sharing functionalities by the users, which become very important issues in order to meet the overall objective of knowledge sharing within the institution. It was argued that organizations should focus more closely on the specific capabilities required to meet the objectives of knowledge sharing [1].

For that reason, finding out the students' preference to the functionalities of the knowledge sharing tools will contribute to the institution under study in investing on the specific capabilities required to meet the objectives of knowledge sharing. The purpose of this study is aimed at providing solutions to the following research question as:

1) What knowledge sharing tools do the students prefer to support their learning and sharing?

II. LITERATURE REVIEW

A. Importance of Knowledge Sharing Tools in Universities

Knowledge sharing tools can be used to promote evidence-based practice and decision making, and also to promote exchange and dialogue among researchers, policymakers, and service providers [2]. As the Knowledge sharing tools are becoming more and more important, educational institutions are trying to harness this opportunity to students learning environment in order to create value. It was being emphasized that the growth of institutions mostly depends on the knowledge they create, available channels they have in transferring the knowledge to others, and the exchanges and relationships that they foster among people [3].

Knowledge sharing tools help educational organizations to better meet their overall objectives as it will "rapidly bring about a knowledge-sharing culture" [4]. The increasingly adoptions of Knowledge sharing tools could result to a positive effect on organization performance [5]. Knowledge sharing tools are among the most important factors in building innovation in universities, which allows long-term success [6]. The rationale behind knowledge sharing tools is to utilize existing knowledge or create new knowledge [7, 8] in order to reap the value of knowledge through knowledge sharing processes [9]. Knowledge sharing tools enhance individuals' capability to retrieve new data and resources for the purpose of learning, problem solving, and self-improvement [10].

In essence, knowledge sharing tools in the context of educational environment plays important role in overall improvement of performance for both staff and students such as in communication and collaboration, research,

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B. Knowledge Sharing Tools

Nowadays, there exist many knowledge sharing tools that make possible the management and organization of knowledge easily in universities as well as organizations. The knowledge sharing tools consist of websites or software that can be used to support personal and group knowledge sharing. The knowledge sharing tools comprise of Calendars, Blogs, Chats, Content Management System Data/Information, Visualization Tools, Collaborative Workspaces Content, Discussion Forums (including email lists), Emails, Instant Messengers, Frequently Asked Questions, File Libraries and File Sharing Language Translation Technologies, Learning Management Systems, Micro blogging, and Newsletters [11]. Similarly, another study has shown.

III. METHODOLOGY

This study was conducted in International Islamic University Malaysia (IIUM) as part of master degree awarded in May 2014.

The study employed Stratified sampling method in the drawing the sample size that served as a representative of the population. The basis for selecting this type of sampling technique is to classify the students based on their Faculty (Kulliyah) because the students differ across the Faculty (Kulliyah) in respect of specialization and courses offered.

Data from the respondents was personally collected by the researcher after administering the questionnaire to Undergraduates and Postgraduates at their respective Faculty (Kulliyah) of IIUM Gombak Campus. The researcher used the class hours during which the students were having lectures to collect the data from them after a formal introduction to the lecturers and brief explanation about the purpose of the study. The students were given up to one week to answer the questionnaires after which the researcher went back and collected their responses. Secondly, the researcher also used online media (Facebook groups of each Kulliyyah and the students' e-mails to solicit for their responses).

In this study, a total of 287 respondents participated from seven Faculties (Kulliyyahs) that include Kulliyyah of Information and Communication Technology (KICT); Institute of Education (INSTED); Kulliyyah of Economics and Management Sciences (KENMS); Kulliyyah of Engineering (KOE); Ahmad Ibrahim Kulliyyah of Laws (AIKOL); Kulliyyah of Islamic Revealed Knowledge and Human Sciences (KIRKHS); and Kulliyyah of Architecture and Environmental Design (KAED) in IIUM Gombak campus.

The sample for each stratum (Faculty) was 55 but the response rate in some of the Faculty (Kulliyah) was not up to the allocation. The overall response rate was 75%, which is depicted in Table I.

In the part of data analysis, the study used descriptive statistic whereby frequency and percentage were considered.

TABLE I.   RESPONSE RATE ACCORDING TO THE STRATUM

SN	Stratum (Kulliyah)	Expected Respondents	Actual respondents	Response rate
1	KICT	55	52	95%
2	INSTED	55	51	93%
3	KENMS	55	49	89%
4	KOE	55	40	73%
5	AIKOL	55	34	62%
6	IRKHS	55	32	58%
7	KAED	55	29	53%
	Total	385	287	75%

IV.   FINDINGS OF THE STUDY

A. Descriptive Statistic of the Respondents

Table II depicts the demographic attributes of the respondents based on gender, nationality, level of education, and Kulliyyah (faculty). In this study, a total of 287 respondents participated from seven Kulliyahs (KICT, INSTED, KENMS, KOE, AIKOL, IRKHS, and KAED) in IIUM Gombak campus.

TABLE II.   DESCRIPTIVE STATISTICS OF DEMOGRAPHIC ATTRIBUTES OF THE RESPONDENTS

Respondents	Frequency	Percentage (%)
Gender		
Male	132	46.0
Female	155	54.0
Total	287	100.0
Nationality		
Local	208	72.5
International	79	27.5
Total	287	100.0
Level of Study		
Undergraduate	221	77.0
Postgraduate	66	23.0
Total	287	100.0
Kulliyah (Faculty)		
KICT	52	18.1
INSTED	51	17.8
KENMS	49	17.1
KOE	40	13.9
AIKOL	34	11.8
IRKHS	32	11.1
KAED	29	10.1
Total	287	100.0

The responses based on gender revealed a result of male having 46% while the larger portion goes to the Female with 54%. This indicates females are the majority who responded to this research.

This research has categorized the students into two types of nationality with indigenous (Local) having the highest percentage of 72 and foreign (international) having lowest percentage of 28.

From the respondents, level of education shows a wide gap of responses between the postgraduate and undergraduate students. The postgraduate students have

23% while the undergraduate having 77%. This indicates that more responses came from undergraduate students.

At the Kulliyah (faculty) level, the highest responses came from KICT and INSTED with 18% and 18% respectively. Meanwhile, students from KENMS and KOE have provided moderate responses to the research with 17% and 14% correspondingly. Other Kulliyahs in Gombak campus have the lowest responses. These Kulliyahs are AIKOL with 12% respondents, IRKHS having 11% respondents, and KAED with 10% respondents.

B. Empirical Results

This part presents the quantitative results of the study used to answer the research questions "WHAT KNOWLEDGE SHARING TOOLS DO THE STUDENTS PREFER TO SUPPORT THEIR LEARNING AND SHARING?"

TABLE III. DESCRIPTIVE STATISTICS OF RESPONDENTS BASED ON FEATURES OF KNOWLEDGE SHARING TOOLS

Features to support Knowledge sharing	Frequency	Percentage (%)
Help desk (care lines)	42	2.9
Search engine	189	12.9
Feedback	78	5.3
Video Conferencing	78	5.3
Audio Conferencing	53	3.6
Instant Messaging/e-mail	218	14.9
Web Conferencing	41	2.8
Online Group Discussion	166	11.3
Blog	80	5.5
Electronic Documents (e-books, journals, projects etc)	165	11.3
Tutorials	139	9.5
Instructional games	35	2.4
Content/lesson creation	81	5.5
News and adverts	101	6.9
Other	0	0.0

Table III describes the results of features require from knowledge sharing tools to support learning in which the highest response goes to the statement 'Instant Messaging/e-mail' with 218(14.9%) respondents. The statement 'Search engine' has received substantial responses of 89(12.9%). There are some items that have equal percentage of responses, which include' Feedback' and 'Video Conferencing' with 78(5.3%) and 78(5.3%) correspondingly. Similarly, the two statements 'Online Group Discussion' and 'Electronic Documents (e-books, journals, projects etc)' have the same percentage with 166 (11.3%) and 165(11.3%) respondents respectively. The statements 'Tutorials' and 'News and adverts' have received substantial number of responses with139 (9.5%) and 101(6.9%) respectively. However, the remaining

items have low responses these include "Help desk (care lines) with 42 (2.9%), 'Audio Conferencing' with 53(3.6%), 'Web Conferencing' with 41(2.8%), 'Blog' with 80(5.5%),'Instructional games' with 35(2.4%), and 'Content/lesson creation' with 81(5.5%) respondents.

From the results, majority of the students prefer features such as Search engine, Instant Messaging and e-mail, Online Group Discussion, Electronic Documents (e-books, journals, projects etc), Tutorials, and News and adverts of the Knowledge sharing tools than others. Some of the other features have a significant role in sharing of knowledge though not all the respondents need them to support their sharing activities. These tools include Feedback, Video Conferencing, Blog, and Content/lesson creation. The least preferred features of Knowledge sharing tools to support students' sharing activities are Help desk (care lines), Audio Conferencing, Web Conferencing, and Instructional games.

V. DISCUSSION OF THE RESULTS

The findings regarding the demographic information of the respondents illustrate that Female students constitute 54% of the total respondents, which is higher than that of their male counterparts who represent the remaining 46% of the respondents in this research. Similarly, the result of the number of respondents by their nationality shows that indigenous (Local) students are higher with 72% compared to the foreign (international) respondents whose figure stands at 28%. The reason for these differences in gender and nationality is because majority of the postgraduate students come from different part of the world, while the undergraduate students are mostly Malaysians. This justified the reason why the number of the undergraduate respondents is higher in this study. Similarly, in Malaysia, the ratio of male to female enrolment in tertiary institutions is at 40: 60 [12]. Furthermore, the number of respondents at Kulliyyah level was not uniform and none of the Kulliyyahs' respondents reached the actual number of stratum (55 respondents) allocated to it. However, the actual response rate of the respondents from all the Kulliyyahs has met the acceptable representation of each stratum.

The descriptive statistics results used in answering the research question revealed the preference of the respondents in knowledge sharing tools for collaboration and learning. The students have given priorities to those tools with the utility to find and search materials, events, or people easily; instantly communicate with colleagues, friends, or experts; create group to discuss issues and/or to increasing social conversion; provide academic materials; encourage after the class learning like tutorials; and latest information about technologies and other aspects of life. Similarly, other functions like providing a view or commenting on issues, making calls with Video facilities, writing or publishing information on the web, and Content/lesson creation can have a positive impact on supporting students to share knowledge in higher education. In addition, activities that involve providing support and care lines, Audio Conferencing, Web Conferencing, and Instructional games have been found

to have significant influence to share knowledge. Similar study found collaborative document management system, instant messaging, shared directories, video/audio conferencing, private discussion groups, and online visualization tools useful or completely useful [13]

VI. Contribution and Limitation of the Study

This study gives an insight of what students want from knowledge sharing tools to support their education. Therefore, the study will contribute toward encouragement and support of knowledge sharing among students in higher education by the authorities. The authorities saddled with responsibilities of implementation and development of Knowledge management systems can use this study to foresee the features needed to be incorporated to the systems.

This study is associated with a number of limitations such as the respondents' level of education to which majority of responses came from undergraduate and was limited to one university.

VII. Conclusion and Future Study

Knowledge sharing tools have become integral part of today's education. Institutions worldwide are using these tools to facilitate learning as well as collaboration. This study was conducted to examine the students' preference to knowledge sharing tools to support their learning process. The results of this study indicate students prefer some features of the web 2.0 tools than others to share their knowledge. This implies that many students may hesitate to share knowledge because the features they need were not incorporated. Therefore, providing these facilities of the knowledge sharing can promote learning and sharing among students.

The future study focuses on the student's profession toward his/her choice of the knowledge sharing tools. This will provide an insight whether students' profession or specialization requires particular technologies or features to influence their choice in using the knowledge sharing tools.

Acknowledgment

References

[1] J. Robertson. There are no "KM systems". (March 2007). [Online]. Available: www.steptwo.com.au/papers/cmb_kmsystems

[2] L. Tsui, A. S. Chapman, L. Schnirer, and S. Stewart, "A handbook on knowledge sharing: Strategies and recommendations for researchers,policymakers, and service providers," *Alberta: Community-University Partnership*, 2006.

[3] L. A. Petrides and T. R. Nodine, *Knowledge Management in Education: Defining the Landscape*, California: The Institute for the Study of Knowledge Management in Education, 2003.

[4] D. K. Nigam. Importance-knowledge-sharing-organizations. N. D. [Online]. Available: http://www.citehr.com/367738-importance-knowledge-sharing-organizations.html

[5] S. Wangpipatwong, "Factors influencing knowledge sharing among university students," in *Proc. 17th International Conference on Computers in Education [CDROM]*, Hong Kong, 2009.

[6] F. Alhammad, S. Al Faori, and S. L. Abu Husan, "Knowledge sharing in the Jordanian universities," *Journal of Knowledge Management Practice,* vol. 10, no. 3, September 2009.

[7] I. O. Oyefolahan, P. D. Dominic, and N. S. A. Karim, "Knowledge management systems utilisation and knowledge sharing effectiveness: An empirical study of social antecedents in Malaysian organisations," *International Journal of Business Information Systems,* vol. 11, no. 4, pp. 410-425, November 2012.

[8] P. H. Christensen, "Knowledge sharing: Moving away from the obsession with best practices," *Journal of Knowledge Management,* vol. 11, no. 1, pp. 36–47, 2007.

[9] M. Alavi and D. E. Leidner, "Knowledge management and knowledge management systems: Conceptual foundations and research issues," *MIS Quarterly,* vol. 25, no. 1, pp. 107–136, 2001.

[10] N. Din and S. Haron, "Knowledge sharing as a culture among Malaysian online social networking users," in *Proc. ASEAN Conference on Environment-Behavior Studies*, Bangkok, Thailand, 2012.

[11] (2014). Tangient LLC. KSTools. [Online]. Available: http://www.kstoolkit.org/KSTools

[12] I. G. Arkilic, S. Pekerb, and E. M. Uyarb, "Student preferences of communication tools for group projects in a computer-supported collaborative learning environment: A survey," in *Proc. 2nd World Conference on Educational Technology Researches*, Nicosia, Cyprus, 2013.

[13] F. Morni, R. Panie, and F. Bujang, "Gender and academic expectations of students in simunjan, sarawak," *International Proceedings of Economics Development and Research,* vol. 47, no. 29, pp. 131-135

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