

Profiling Web Technology Adoption of English Language Instructors in Malaysian Universities

Puvaneswary Murugaiah [1], Yen Siew Hwa [2]

<http://dx.doi.org/10.17220/mojet.2018.04.006>

[1] ampuva@usm.my,
Universiti Sains Malaysia,
Malaysia

[2] shywen@usm.my,
Universiti Sains Malaysia,
Malaysia

ABSTRACT

Undeniably the use of web technology in language teaching and learning has advanced by leaps and bounds. It not only provides effective learning experiences to the present digitally-inclined students but also assists teachers in creating interesting content and activities as well as in monitoring and evaluating students. Teachers at all educational levels employ web technology in their teaching. However, it has been reported that the technology's potential has not been fully reaped. This paper presents findings from a study investigating the nature and extent of web technologies used by Malaysian tertiary English language instructors. The aim was to examine the nature and extent of using such tools in language teaching. Profiling the web technology adoption by these instructors would provide insights on the degree of use and the range of web potentialities that has been explored; providing vital information to all key players regarding support and training needs, among others. The findings of the study revealed that the English instructors employed a myriad of web tools. They demonstrated a high level of use of these tools for teaching but only a medium level for communication and evaluation.

Keywords:

web technologies, English language, teaching, higher education, profile,

INTRODUCTION

It is undeniable that the educational landscape worldwide has changed with the emergence of Web technologies and that internet-derived technologies have added educational value to the conventional system of knowledge distribution in the classroom (Barnett, Keating et al., 2004). Velagapudi (2013) refers to Web technologies as the "next generation" of Internet technologies that facilitate interaction with the user. New applications of web technologies have reinforced the potential for improved communication and interaction in the classroom setting as well as more independent and cooperative learning and teaching. Tools including search engines, blogs, shared whiteboards and social networks provide pedagogical applications to support teaching and learning and represent a move towards a more collaborative and participatory approach to learning. Grosbeck (2009) opines that the use of the web allows collaboration, active participation in content creation, knowledge generation and also information sharing in an online setting.

A new generation of learners who were not only exposed to a digital culture but were surrounded by digital technology as an integral part of their lives from young is entering higher

education. Prensky (2001), Gibbons (2007) and Underwood (2007) argue that for these youngsters, the use of new technologies is extremely significant and thus, teaching and learning must adapt to the cognitive and social features of these 'digital natives' (Prensky 2001). When web technologies are integrated as partners in the teaching and learning environment, they facilitate authentic as well as autonomous learning.

In the belief that web technologies have a significant impact on pedagogical practices, higher institutions of learning are increasingly implementing web technologies in their teaching. Tertiary institutions in Malaysia are no exception. Several studies on the use of web technology in language teaching in Malaysian tertiary institutions have been conducted (Thang, et al., 2016; Hamat et al., 2011; Murugaiah & Thang, 2010, Murugaiah et al., 2010, Tunku Badariah et al., 2010; Kabilan et al., 2010). However, research profiling English language instructors' nature of use of web technologies is limited. Hence, the need for this study. The focus is on identifying and profiling the current status of adoption of web technologies in language teaching in universities. Specifically, it aims to shed light on the types and nature of use of web technologies by language instructors. Its results could prove useful to all stakeholders in tertiary institutions – academic staff, administration and management towards understanding and improving the adoption of web technologies in English language teaching in universities, so that the potentialities of web tools are fully maximised.

Web Technology Use

The benefits of using web technologies in higher education cannot be overstated. It has been established that the benefits for both students and lecturers are manifold and that with the adoption of web technologies, it is possible for both students and faculty members to meet the challenges of the future. With the increasing demand for new educational and pedagogical approaches to teaching and learning, web technologies play a very significant role in language learning and teaching, particularly the English language. Blattner and Fiori (2009) point out that among the web tools used for learning, Facebook is a tool that can be adopted to provide authentic language interaction, increase motivation and enhance performance of English language learners. Other studies (Conroy, 2010; Birch and Volkov, 2007) show that web-based learning can help students in higher education institutions (HEIs) in areas such as language learning and academic writing because elements such as emails, bulletin boards, chat rooms, and online discussions can promote learner-instructor and learner-learner interactions. In addition, Birch and Volkov (2007) point out that English as a second language (ESL) students who may be shy or hesitant to speak up in face-to-face settings might actually prefer to use online forums to engage in discussions as it can help them overcome their linguistic limitations and help them voice out their thoughts and opinions. Ru-Chu Shih's (2011) study found that by using a blended instructional approach, that is, using Facebook with face-to-face instruction for an English writing course, students not only learned English writing skills but were more attentive and willing to express their own ideas in writing and interacting with other people.

Following this, institutions of higher learning have embraced web technologies to a certain extent. New teaching practices include sharing of videos (such as Slideshare), platforms for content production, communication and collaboration (such as Facebook, blog, wiki, Twitter) as well as large scale communication (such as web conferencing). The emergence of such web tools has challenged teachers to rethink their pedagogical practices in the classroom (Selwyn, 2012). Instructors in tertiary institutions are also drawn into this technologically-induced teaching web. The technology enables teachers to not only use the tools to assist them in classroom teaching but also to develop their own teaching content specifically tailored for their students as well as to help them in student assessment; that is, developing tests, grading, tracking assignments and others. In fact, studies have shown how the incorporation of web technology by lecturers have led to effective learning. An Australian survey (Education Network Australia, 2008) found out that 90% of higher education teachers considered the Internet very important in improving teaching and learning opportunities and resources for students.

Over 10% of them claimed they use and integrated digital learning objects in their lessons. From the language learning perspective, numerous studies have been conducted on the use of web tools. For example, Kovalchuk and Krasnokutskaya (2017) claimed that blogging enabled students to learn English beyond the classroom by chatting and sharing pictures and other information. Sun (2014) found using wikis helpful in developing students' writing skills while Cross (2014) demonstrated how podcasts promoted autonomous listening. Al Mubarak (2016) employed social media in enhancing communication skills. Chung (2015), on the other hand, used mobile devices to improve students' vocabulary learning.

The use of web technologies in language courses in tertiary institutions has also been reported in Malaysia. These institutions have taken up the Ministry of Higher Education's call for promoting student learning with the support of technology in the Malaysian Education Blueprint 2015-2025 (Ministry of Higher Education, 2015). Various web tools are used in language teaching at the tertiary level (Arshad et al., 2010). Electronic portals that provide web-based learning environments are prevalent in tertiary institutions (Embi, 2011). Web tools have also made their way into language learning environments. For instance Kabilan (2010) reported on the use of Facebook in teaching English proficiency whereas Ali and Ghazali (2016) illustrated the use of mobile devices in learning technical vocabulary. The use of other tools like blogs and podcasts have also been documented by Supyan et al. (2016) and Hasan and Tan (2012) respectively.

However, drawbacks have been reported regarding the adoption of web tools. One major issue is the open nature of these tools. The fact that a teacher-generated content can be shared and viewed by many makes it uncomfortable for instructors (Ahmed et al., 2016, Tyagi, 2012; An & Williams, 2010). Internet connectivity and accessibility problems also hinder the use of web technologies (Embi, 2011; Kula, 2010; Ahmed et al., 2016; Tyagi, 2012). Furthermore, some instructors are not keen to use the tools in their teaching due to factors such as lack of digital literacy and heavy workload (Estable, 2014). Instructors' negative attitude towards web technology adoption is a critical obstacle. As far as language teaching is concerned, Dunlap and Lowenthal (2009) claim that social media encourage poor grammatical structures. In using Twitter for example, the character limitation of tweets promotes the use of abbreviations and the disregard for proper grammatical structures.

Having said that, the benefits of web tools in teaching far outweigh the drawbacks (Venkatesh et al., 2012; Tunku Badariah et al., 2010; Ajjan & Hartshorne, 2008; Sordt & Summey, 2009; Richardson, 2006; Carpan, 2010). Yet literature posits that on the whole, only a small number of enthusiastic teachers and those with interest in technology or new media have dabbled with new innovations in pedagogy and explored the use of new technologies. For instance, Macdonald and Poniatowski (2011) reported that based on a survey conducted on students of 125 institutions in the United States, less than half of them felt that technology has not been effectively utilized by their instructors. It could be due to their apprehensiveness of using technological tools in teaching. Kolowich (2012) revealed that in a study by *Inside Higher Ed*, more than 50 percent of about 5000 faculty members feared the growing trend in incorporating technology in teaching. Similar findings have been reported in Malaysia. In examining learning management systems (LMSs), Hamat et al. (2011) argue that LMSs were under utilized. This could be attributed to factors such as poor attitude of instructors (Buche et al., 2012) or even low motivation (Supyan Hussin et al., (2011). The factors that contribute to such a disturbing drift must be checked. The nature and extent of web tools used in teaching must be first examined to provide vital information to all key players. This study on Malaysian tertiary English language instructors therefore, particularly aims to explore the types, frequency and purpose of use of web technologies in language instruction.

It must be noted that studies on profiling the use of web technologies by instructors are few. An and Williams (2010) examined best practices of teaching using web tools. They focused on the benefits and barriers of adopting the tools. A recent study by Ahmed, AbdelMuniem and Almahboub

(2016) profiled the use of web 2.0 tools by the education faculty academics in Sudan. To the best of the researchers' knowledge, there has been no studies conducted on profiling instructors' web use in Malaysia although there were a few on students (Thang, et al., 2016; Zakaria et al., 2010). Hence, the need to profile Malaysian language instructors is crucial as it would shed light on the degree of use and the range of potentialities of the web that are being explored by instructors. The findings would help institutions to put forth measures to ensure the potential of these tools for teaching and learning is fully utilized.

RESEARCH METHOD

This research is part of a larger study being conducted to explore the acceptance and adoption of web technology by English language instructors in four Malaysian universities. The present study in particular attempted to uncover the nature and extent of use of web technologies in teaching. A descriptive analytical method comprising both quantitative and qualitative approaches was used to investigate the current status of using web tools in university teaching.

A descriptive analytical method comprising both quantitative and qualitative approaches was used to investigate the current status of using web tools in university teaching. Two research instruments were employed in the study. Based on several studies on web technology adoption (Venkatesh et al., 2012; Tunku Badariah et al., 2010; Ajjan & Hartshorne, 2008; Sadik, 2007; Gammil & Newman, 2005; St. Clair & Baker, 2003), a questionnaire was designed. Two sections explored the nature and extent of web technology use: types of web technologies used in teaching (10 items) and use of web technologies in teaching (22 items). In the first section, items required a "yes" or "no" answer while in the second, the items required responses on a five-point Likert scale with scores ranging from either "never" to "always". A reliability test was conducted on the use of web technologies scale comprising 22 items. The Cronbach alpha was 0.913, indicating internal consistency of the scale. The questionnaire was validated by educational technology experts in the researchers' university for face validation. Their reviews and suggestions were used to improve on the tool. As the questionnaire was adapted from other studies, it was pilot tested on twelve English language instructors from an institute of higher learning that is not involved in the study prior to its administration. Their valuable comments were used to further revise the instrument. The questionnaires were administered to the respondents by the researchers themselves and collected after two weeks.

Based on the quantitative analyses of the questionnaire data, interview questions were formulated to gain a better insight of instructors' adoption of web technologies in their teaching. A semi-structured format was adopted for the interview schedule. A convenience sampling method was used to select the participants to be interviewed. As instructors from four universities were involved, those who were available during the researchers' visit were interviewed. Sixteen participants were selected for this purpose. Each interview lasted about twenty minutes. The questions ranged from the types and uses of web technologies in teaching to the factors that impact on their use. Every interview was audio-taped and transcribed for analysis. The data were analysed by two independent coders who were experienced researchers. They were requested to identify themes related to types, uses and reasons for use of the technologies. They then compared their coding. In the event of a mismatch, the particular data set was scrutinized until an agreement was reached.

FINDINGS AND DISCUSSION

Data were analysed using the Statistical Package for Social Sciences (SPSS) version 24. Standard forms of statistical measures were employed. Descriptive statistics were used to examine the types of web technologies tools used while factor analysis was employed to investigate the uses of web technologies. The interview responses were transcribed and thematically categorized. To ensure

confidentiality, in this paper the universities were labelled as A, B, C and D while the participants from A were labelled as A1 to A4, those from B as B1 to B4, C from C1 to C4 and D from D1 to D4.

Demographic Profile

A total of 128 English language instructors from four public universities participated in this study. Their profile is presented in Table 1.

Table 1. Demographic Profile of Participants

		Percent (%)
Gender	Male	22.7
	Female	77.3
Age	20-30 years	28.1
	31-40 years	25.8
	41-50 years	28.9
	51-60 years	17.2
Teaching experience	< 5 years	28.1
	6-10 years	19.5
	11-15 years	21.9
	16-20 years	10.2
	21-25 years	9.4
	26-30 years	7.8
No. of courses taught	> 31 years	3.1
	1	9.1
	2	33.1
	3	27.3
	4	22.3
	> than 5	8.3

The participants were predominantly women (77%) with an age range of 25-50. Most of them teach between 2 to 4 courses (83.3%) and their teaching experience at the university level varied between 2 – 30 years.

Figure 1 reports the demographic characteristics of instructors in each university. A prominent feature displayed is the age of instructors in university C. A majority of them (75%) are young aged between 20 to 30 years. Consequently, most of them have less than 5 years of teaching experience (80%).

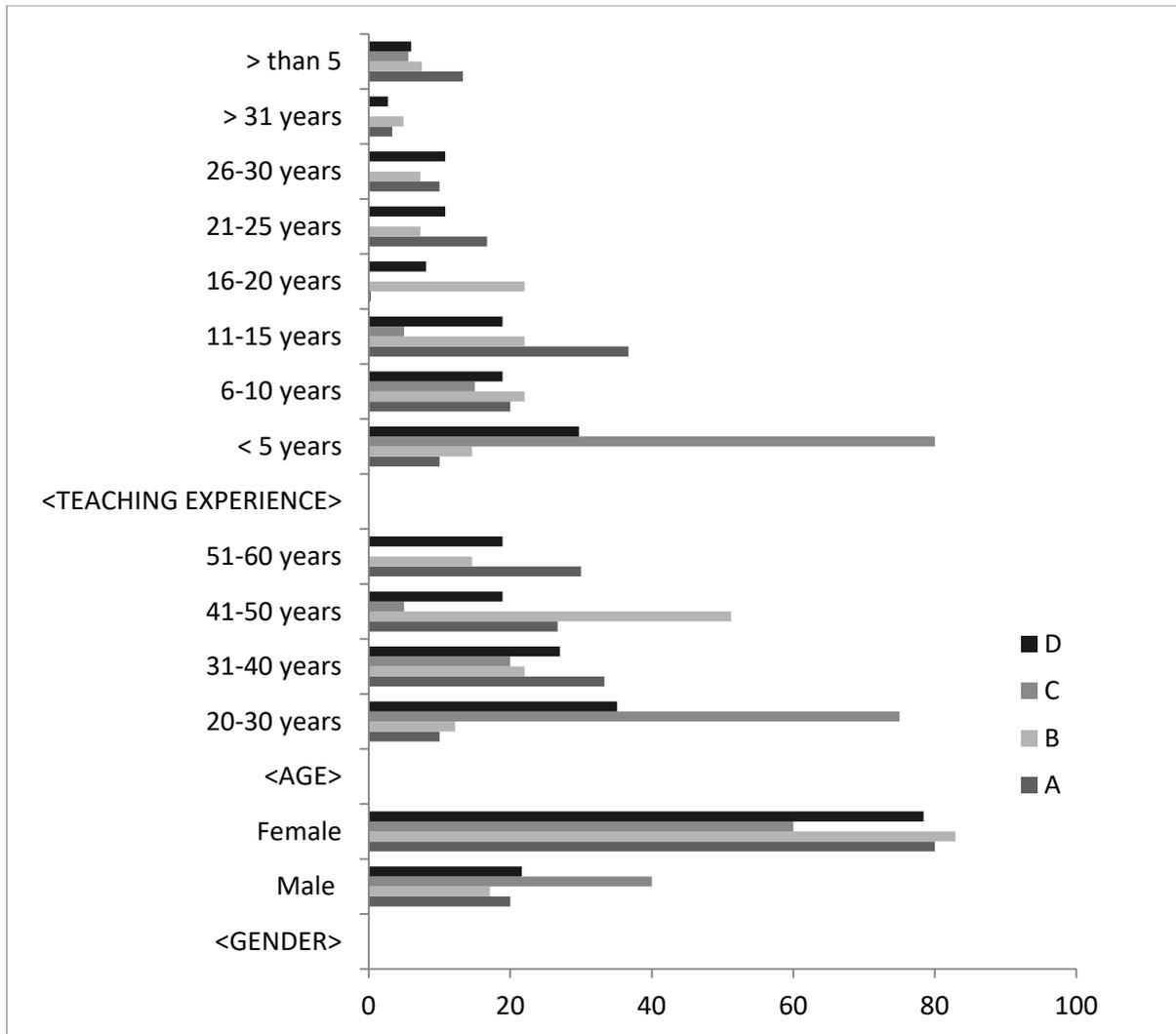


Figure 1. Demographic Details of Instructors from Different Universities

Types of Web Technologies Used in Teaching

The first section in the questionnaire made reference to the types of web technologies used in teaching. Respondents' were asked to identify them from a list given. Figure 2 gives an overall picture of the tools used regardless of the universities the respondents were from.

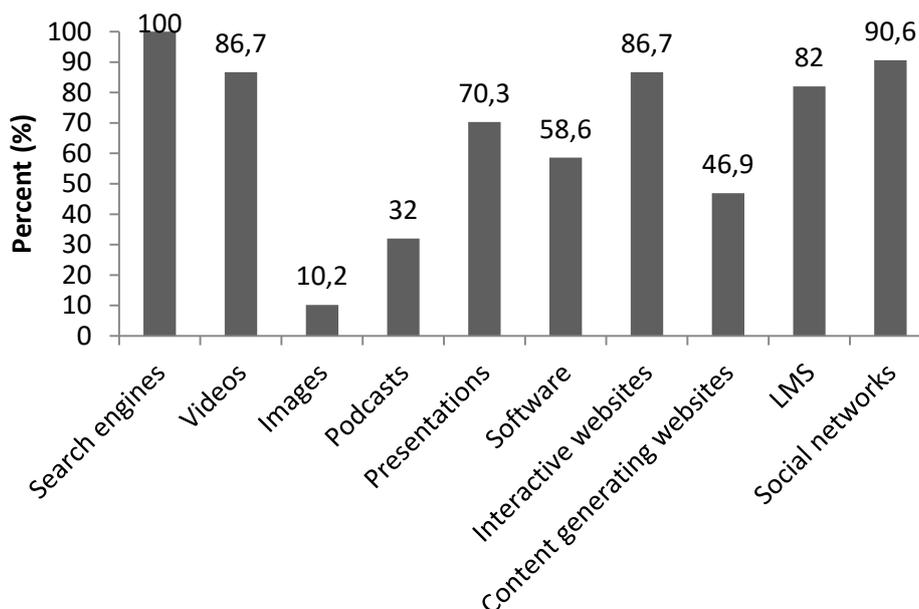


Figure 2. Types of Web Technologies Used

The web tool used by all respondents is search engines like Google (100%). The next three popular tools are social networks (90.6%), interactive websites (86.7%) and video resources (86.7%). A probable reason for this is the fact that instructors are aware of the present students likes as digital natives (Smith, 2012). They demand varied activities and tasks, quick access to information and easy interaction. Hence, the onus is on instructors to cater to their needs. Instructors' interview responses clearly denote this. For example, participants A2, C3 and D4 elaborated on the reasons for commonly using social media, interactive websites and video resources respectively.

A2: ...students get the information faster...If like e-learning, they have to go in and subscribe...they don't really do all this. So it's really quite difficult for me to reach them but with Facebook and WhatsApp, it's faster and the students can respond...better.

C3: I'll find videos from YouTube related to my lecture... and I will bring it to class... because if I don't show them video and all they will start talking and ...they will fall asleep in my class...so videos are one of my ways to prevent them...

D4: I always use this website pollev.com ... Nowadays students are forever with their mobile phones ...so I thought why not I use hand phones to the max ... for example ...last week I asked them a question 'Where do you see yourself after graduation?' and then they post the answer online ... so everybody can see their answer ... So everyone participates...

The three least popular web technologies are image resources (10.2%), podcasts (32%) and content generation websites (46.9%). The fact that resources such as Flickr (videos) and iTunes (podcasts) are not popular does not necessarily mean minimal use of images and songs in the language classroom. Instructors could obtain such resources from search engines like Google and Yahoo too. The lack of support by teachers to use podcasts was reported by Zakaria, Watson and Edwards (2010) in their study conducted in a Malaysian private university. Moreover, tools like Flickr, blogs and wiki are mainly used to create content, which most of these instructors do not dabble in (as mentioned in the next section). It is imperative to note that the availability of interactive websites like Kahoot that allow students to participate in activities with one another could have also led to this finding. Participant C1 explained the advantage of Kahoot over blogs.

C1: I use Kahoot alot...students like it because got many interactive activities and games...it's fun. Not like blogs...read each other's views only.

Several studies demonstrate similar findings with regard to web tools that are familiar and commonly used by academics. For instance, Gobel and Kano (2013) in their study in a Japanese private university found that instructors mostly use search engines (such as Google and Yahoo), followed by LMS, YouTube and social networking sites (such as Facebook and Twitter). In another study by Ahmed, AbdelAlmuniem and Almabhohu social media, YouTube and blogs are the most commonly used tools. The accessibility, ease of use, functionality, and flexibility have attracted instructors to employ these tools in their teaching (Ajjan & Hartshorne, 2008). More specifically, their potential in enhancing language learning has prompted instructors to use them, namely social media. The popular use of social networking sites by instructors as revealed in the current study is in tandem with the findings of two Malaysian studies. It was reported that these sites are preferred as they enable students to not only improve their learning but also share information with their peers and instructors (Hamat et al., 2011). In concurring with Hamat's findings, Kabilan et al. (2010) found that learning of English in Facebook is feasible. This is because the technologies in Facebook enable students to engage in meaningful language-based activities.

Despite it being a readily available platform in each university for instructors to upload and for students to access information and interact with their peers and instructors, the LMS was not one of the most used tools. This concurs with the findings of Supyan Hussin et al. (2011) who asserted that many academics in Malaysia are only moderately motivated to participate in e-learning training. In the present study, this could be due to the fact that it may be viewed as not popular among students, as attested to by participants A1 and B3.

A1: I upload something in e-learn... I don't check their work because they tell me they have no time for all that.

B3: ...as instructors we have the record ... and sometimes I can see that half of the class don't access to e- learning zone

Upon closer scrutiny, it is found that in both universities C and D, the use of LMS is compulsory due to e-learn policies of these universities. This could have contributed to its relatively high use (82%). Participants C2 and D4 elaborated on the demands of using the LMS in their universities.

C2: MyLinE is compulsory for degree and diploma students. All English lecturers...we use MyLinE...for degree and diploma students ...

D4: I think they (administration) are sort of ...forcing us to use it ... if you do not use ... they will send you email ... they will ask you, why are you not using it?

Uses of Web Technologies in Teaching

The next section in the questionnaire required respondents to rate various uses of tools in teaching according to how frequent they, the instructors, utilize them. Factor analysis was conducted for this purpose. The 22 uses of web technologies items were subjected to principal component analysis (PCA) after the suitability of data for factor analysis was tested. Correlation matrix amongst the items showed most of the coefficients are 0.35 and above. The Kaiser-Meyer-Olkin value was 0.844, which exceeded the recommended value of 0.6 (Kaiser 1970, 1974) and the Bartlett's test for both was also significant (Bartlett 1954), which supported the factorability of the correlation matrix. PCA indicated three components for both models with Eigen values more than 1. Varimax rotation was used to facilitate interpretation of factor loadings and coefficients were used to obtain factor scores for the selected factors. In social science studies a moderate communalities values of 0.5640 and 0.70 are common and acceptable (Velicer & Fava 1998). A communality value of less than 0.40

may suggest that the item does not relate to the other items in the same factor. Communalities for uses of web technologies were within the range of 0.40 and 0.76, indicating that all items in each factor were related except for one (Facilitate student research) with communalities score of only 0.35. The analysis could factor out three components, which explained the uses of web technologies in teaching: preparation and teaching, students' communication as well as evaluation, as shown in Table 2 (see Appendix). Figure 3 shows the frequency of uses of web technologies as well as the average mean scores for all items in each factor.

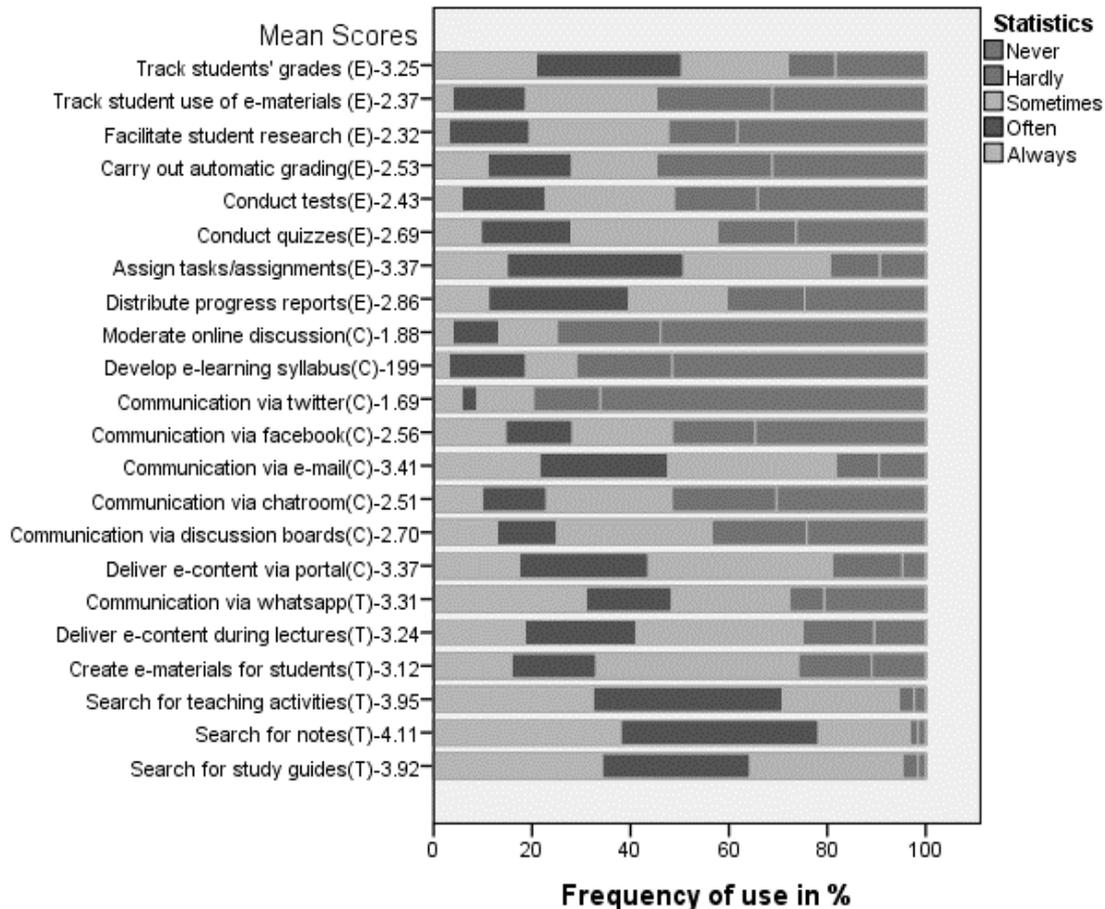


Figure 3. Use of Web Technologies for Evaluation (E), Communication (C) and Preparation and Teaching (T)

It is apparent from the average mean scores in Fig. 3 that instructors most use web technologies to search for notes (mean score of 4.11). To make their teaching effective and meaningful, they tend to search for the best notes and activities, as explained by participant A1

A1: I mean for class preparation... download songs probably or go to search engine...get information ... how to make good presentations and what not ... so there I will go to Google search and find ...

From the average mean scores too, the factors representing communication and evaluation demonstrate moderate use of web technologies. In the study, communication via e-mail obtained the highest score (3.41) whereas communication via twitter garnered the lowest (1.69). As e-mail is the standard form of communication in universities, it is used most often. Twitter on the other hand, is least used in teaching due to the availability of many other social networking tools such as WhatsApp

and Facebook. Concerning evaluation, the instructors seem to mostly use web technologies to track student grades and assign tasks or assignments. However, they are not commonly used to conduct tests or quizzes. Traditional face-to-face assessments seem to be the norm in most situations.

Upon closer scrutiny, it is obvious that the extent of use for other purposes such as for student interactions, monitoring and grading student work is not as high as that for teaching and learning. This finding is in tandem with that of Ahmed et al. (2016). In investigating the level of web 2.0 tools usage by faculty members, they found that the main purpose of using the tools was to search for information, and then followed by communicating with students and evaluating (analysing grades and creating quizzes). A key contributing factor for this trend could be the lack of training on other uses of web tools, especially for interactions and assessment. In fact, the study by Ahmed et al. (2016) pointed to lack of training on the varied uses of web tools for instructors as the main reason for such a pattern.

LIMITATIONS

While this study examined the nature of web technologies use, it did not probe into the factors that enhance or hinder instructors' use or universities' role in advancing the use. Moreover, it did not explicitly examine the manner in which the tools were used both inside and outside the classroom. Studies on these areas are vital as they would shed even greater light into how to use web technologies more effectively in tertiary institutions. Furthermore, the study only focussed on four universities. A larger sample may present more varied nature of web use among the academic community; which could lead to a comparative study in the future. Apart from this, convenience sampling was used in the study. The issue of biasness associated with this method could be addressed by incorporating other techniques such as cluster sampling in future research.

CONCLUSION

This paper examined the nature and extent of use of web technologies among English language instructors in Malaysian public universities, in an effort to determine the types and uses of web technologies. The findings revealed that web tools such as search engines, social networks, videos and interactive websites are mostly used for teaching. They find these tools, which are favoured by students, easy and convenient to use. Moreover, the study demonstrated the predominant use of these technologies for preparation and teaching but less for communication and evaluation. This signals the need for universities to facilitate new and varied web applications to optimize language teaching and learning. More training must be provided to encourage and improve the digital literacy of instructors. Besides, it is vital for institutions to discover new ways to support their academics in making meaningful use of web technology in their teaching. For instance, it was found that although web tools are employed, teachers still adopt a teacher-centred approach, which conflicts with the very nature of web technology (Selwyn, 2012). That student engagement, participation and interaction with content, peers and instructors would pave the way for student-centred learning environment. Thus, a meaningful use of the tools would assist teachers to wean off their teacher-centred approach and move towards studentcentredness, the crux of 21st century learning.

ACKNOWLEDGMENT

The authors would like to thank Universiti Sains Malaysia for funding this work through the grant (304/PJAUH/6313067). They would also like to thank the language instructors in the four universities for rendering their cooperation in this study.

REFERENCES

- Ahmed, A., Almuniem, A. and Almabhouh, A. (2016). The current use of web 2.0 tools in university teaching from the perspective of faculty members at the College of Education. *International Journal of Instruction*, 9(1), 179-193.
- Ajjan, H. & Hartshorne, R. (2008). Investigating faculty decisions to adopt web 2.0 technologies: Theory and empirical tests. *Internet and Higher Education*, 11, 71-80.
- Al Mubarak, A.A. (2016). Learning English as a second language through social media: Saudi Arabian tertiary context. *International Journal of Linguistics*, 8(6), 112-127.
- Ali, Z. & Ghazali, M. A. I. M. (2016). Learning technical vocabulary through a mobile app: English language teachers' perspectives. *International Journal of Language Education and Applied Linguistics*, 4, 81-91.
- An, J. & Williams, K. (2010). Teaching with Web 2.0 technologies: Benefits, barriers, and lessons learned. *International Journal of Instructional Technology and Distance Learning*, 7, 3, 41-48.
- Arshad, A, Tan, B.H & Hashim, A. (2010). Tertiary students' application of web 2.0 for English language learning. *Malaysian Journal of ELT Research*, 8 (2), 2 1 – 37.
- Barnett, M.; Keating, T.; Harwook, W. and Saam, J. (2004). Using emerging technologies to help bridge the gap between university theory and classroom practice: Challenges and successes. *School Sciences & Mathematics*, 102(6), 299-314.
- Bartlett, M.S. (1954). A note on the multiplying factors for various chi square approximations. *Journal of Royal Statistical Society* 16: 296-98.
- Birch, D., & Volkov, M. (2007). Assessment of online reflections: Engaging English second language (ESL) students. *Australasian Journal of Educational Technology*, 23(3), 291–306.
- Blattner, G. and Fiori, M. (2009). Facebook in the language classroom: Promises and possibilities. *International Journal of Instructional Technology & Distance Learning*, 6(1), 1-12.
- Buche, M., Davis, L., & Vician, C. (2012). Does technology acceptance affect e learning in a non-technology intensive course? *Journal of Information Systems Education*, 7, 7- 8. Retrieved from <http://ir.stthomas.edu/ocbacctpub/43>.
- Carpan, C. (2010). Introducing information literacy 2.0. *College & Undergraduate Libraries*. 17(1), 106-113.
- Chung, H. H., Chen, S. C., & Kuo, M. H. (2015). A study of EFL college students' acceptance of mobile learning. *Procedia-Social and Behavioral Sciences*, 176, 333-339.
- Conroy, M. A. (2010). Internet tools for language learning: University students taking control of their writing. *Australasian Journal of Educational Technology*, 26(6), 861-882.
- Cross, J. (2014). Promoting autonomous listening to podcasts: A case study. *Language Teaching Research*, 18(1), 8-32. doi: 10.1177/1362168813505394.
- Dunlap, J.C. & Lowenthal, P.R. (2009). Tweeting the night away: Using Twitter to enhance social presence. *Journal of Information Systems Education*, 20, 2, 129-135.

- Education Network Australia (2008). *ICT and Educators Market Research*. Higher Education: Education. au.
- Embi, M. A. (2011). E-learning in Malaysian higher education institutions: Status, trends and challenges. Putrajaya, Malaysia: Department of Higher Education, Ministry of Higher Education.
- Estable, S. (2014). Web 2.0 use in higher education. *European Journal of Open, Distance, and eLearning*, 2, 130-142. Retrieved from <http://www.eurodl.org/?p=current&article=655>.
- Gammill, T. & Newman, M. (2005). Factors associated with faculty use of web-based instruction in higher education. *Journal of Agricultural education*. 46(4), 60-71.
- Gibbons, S., 2007. *Redefining the roles of information professionals in higher education to engage the net generation*. Paper presented at EDUCAUSE, Australasia. Available online at: http://www.caudit.edu.au/educauseaustralasia07/authors_papers/Gibbons2.pdf
- Gobel, P. & Kano, M. (2013). *Student and teacher use of technology at the university level*. Paper presented at the IADIS International Conference on Cognition and Exploratory Learning in Digital Age. Texas, U.S.A.
- Grosbeck, G. (2009). To use or not to use Web 2.0 in higher education. *Procedia-Social and Behavioural Sciences*, 1(1), 478-482.
- Hamat, A., Embi, M.A. & Sulaiman, A.H. (2011). Learning Management Systems in Malaysian higher education institutions. In Mohamed Amin Embi (Eds.), *e-Learning in Malaysian higher education institutions*, 30-50.
- Hasan, M.M., & Tan, B. H. (2012). ESL Learners' perception and attitudes towards the use of podcast in developing listening skills. *The English Teacher*, 41(2), 160–173.
- Kabilan, M.K., Ahmad, N. and Abidin, M.J.J.. (2010) Facebook: An online environment for learning of English in institutions of higher education. *Internet and Higher Education*, 13, 179–187
- Kaiser, H. (1974). An index of factorial simplicity. *Psychometrika* 39: 31-36.
- . (1970). A second generation little jiffy. *Psychometrika* 401-15.
- Kolowich, S. (2012). Conflicted: Faculty and online education. Retrieved from <http://www.insidehighered.com/news/survey/conflicted-faculty-and-online-education-2012>.
- Kovalchuk, O. & Krasnokutskaya, I. (2017). Using blogs in teaching English to philosophy students. *Advanced Education*, 7, 146-153.
- Kula (2010). *Barriers for ICT integration, strategies developed against them and cases in Turkey*. Retrieved from http://edu.rsei.umk.pl/weee2013/publications/v1/V1.3_100-Angudi-fullR-FPR.pdf.
- Macdonald, J., & Poniatońska, B. (2011). Designing the professional development of staff for teaching online: An OU (UK) case study. *Distance Education*, 32(1), 119-134.

- Ministry of Education. (2015). *Malaysia Education Blueprint (Higher Education 2015–2025)*. Putrajaya: Ministry of Education.
- Maloney, E. (2007). What Web 2.0 can teach us about learning. *Chronicle of Higher Education*, 25(18), B26.
- Murugaiah, P. & Thang, S.M. (2010). Development of interactive and reflective learning among Malaysian online distant learners: An ESL instructor's experience. *The International Review of Research in Open and Distance Learning (IRRODL)*, 12(3), 21-41.
- Murugaiah, P., Hazita Azman, Azizah Ya'acob & Thang, S. M. (2010). Blogging in teachers' professional development: Its role in building computer-assisted language teaching skills. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, 6(3), 73-87.
- Prensky, M. (2001). *Digital natives, digital immigrants*. On the Horizon Report. NCB University Press, 9(5). Retrieved from http://pre2005.flexiblelearning.net.au/projects/resources/Digital_Natives_Digital_Immigrants.pdf.
- Richardson, W. (2006). *Blogs, wikis, podcasts, and other powerful Web tools for classrooms*. Thousand Oaks, CA: Corwin Press.
- Ru-Chu Shih (2011). Can web 2.0 technology assist college students in learning English writing? Integrating Facebook and peer assessment with blended learning. *Australasian Journal of Educational Technology*, 27(5), 829-845.
- Sadik, A. (2007). The readiness of faculty members to develop and implement e-learning: The case of an Egyptian university. *International Journal on E-learning*, 6(3), 433-453.
- Selwyn, N. (2012). Social media and higher education. In *The Europa World of Learning*. London, UK: Routledge.
- Smith, E. (2012). The digital native debate in higher education: A comparative analysis of recent literature. *Canadian Journal of Learning and Technology*. 38(3), 1-18.
- Sodt, J. M., & Summey, T. P. (2009). Beyond the library's walls: Using library 2.0 tools to reach out to all users. *Journal of Library Administration*, 49(1-2), 97–109.
- St. Clair, S. & Baker, N.C. (2003). Faculty use and impressions of courseware management tools: A national survey. *Journal of Engineering Education*, 2, 123–131.
- Sun, Z., & Qiu, X. (2014). Evaluating the use of wikis for EFL: A case study of an undergraduate English writing course in China. *International Journal of Information Technology and Management*, 13(1), 3-14.
- Supyan Hussin, Rehab Omar Salem Aboswider, Noriah Ismail & Soo Kum Yoke (2016). Instructors' rationale and perspectives in using blogs as a tool for teaching English as a Second Language. *English Language Teaching*, 9 (10), 142-155.

- Thang S.M., Lee, K.W., Murugaiah, P., Nurjanah, M.J., Tan, C.K. & Nurul Iman, A.B. (2016). ICT tools' patterns of use among Malaysian ESL undergraduates. *GEMA Online Journal of Language Studies*. 16(1), 49-65.
- Tunku Badariah, T.A., Kamal Basha, M., Ahmad Marzuki, Z, Nik Ahmad, H.I. & Mahamad Sahari, N. (2010). Faculty's acceptance of computer based technology: Cross-validation of an extended model. *Australasian Journal of educational technology*, 26(2): 268-279.
- Tyagi, S. (2012). Adoption of Web 2.0 technology in higher education: A case study of universities in National Capital region, India. *International Journal of Education and Development (IJEDICT)*, 2, 40-46.
- Underwood, J., 2007. Rethinking the digital divide: impacts on student tutor relationships, *European Journal of Education*, 42(2), 213–222.
- Velagapudi, M. (2013). 18 FREE Web 2.0 tools for teachers, WizIQ, Inc.
- Velicer, W.F. and Fava, J.L. (1998). Effects of variable and subject sampling on factor pattern recovery. *Psychological Methods* 3, 231-51.
- Venkatesh, V., Thong, J.Y.L. & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*. 36(1), 157-178.
- Zakaria, M. H., Watson, J. & Edwards, S. L. (2010). Investigating the use of Web 2.0 technology by Malaysian students. *Multicultural Education & Technology Journal* 4, 1, 17-29.

APPENDIX

Table 2. Uses of Web Technologies (Factor loadings and Communalities)

	Components			Communalities
	Evaluation	Communication	Preparation & Teaching	
Conduct tests	.833			.78
Conduct quizzes	.794			.68
Track student use of e-materials	.648			.62
Track students' grades	.631			.51
Distribute progress reports	.629			.45
Carry out automatic grading	.628			.41
Assign tasks/assignments	.544			.51
Facilitate student research	.480			.35
Communication via discussion boards		.739		.67
Communication via chatroom		.721		.62
Moderate online discussion		.595		.50
Communication via twitter		.572		.44
Develop e-learning syllabus		.511		.49
Communication via e-mail		.480		.41
Deliver e-content via portal		.480		.55
Search for notes			.869	.76
Search for study guides			.861	.76
Search for teaching activities			.810	.69
Deliver e-content during lectures			.584	.41
Communication via WhatsApp			.531	.51
Create materials for students			.500	.43

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.844
Bartlett's Test of Sphericity	Approx. Chi-Square		1227.774
	df		231
	Sig.		.000
