

THE PLATFORM DEVELOPMENT OF WECWI INSTRUCTIONAL TOOL: A COMPARATIVE SYSTEMATIC REVIEW

Boon Yih Mah¹; Suzana Ab Rahim²

^{1,2}Academy of Language Studies, Universiti Teknologi MARA (UiTM), Penang Branch, Permatang Pauh Campus

¹mahboonyih@gmail.com; ²suzana.arahim@ppinang.uitm.edu.my

ABSTRACT

The use of the internet for teaching and learning has received overwhelming responses from academics over the recent years. This infusion of digital and multimedia technologies into Malaysian ESL classrooms has considerably altered the ELT methodologies. Mastering English in the digital world is not only limited to knowing the syntactic, pragmatic, and lexical items of the language, but also knowing how to read, write, and communicate in electronic environments. In response to the impact of technology in English language teaching (ELT), limitations of the learning management system (LMS) in fostering second language (L2) writing skill, as well as needs of supplementary web-based instruction (WBI) in UiTM Penang Branch as reported in the past studies, a WBI namely Web-based Cognitive Writing Instruction (WeCWI) is thus proposed in this research. WeCWI is a theoretical and pedagogical framework applied into the design and development of a web-based instructional tool. This study applied a comparative systematic review focussing between the two salient alternatives of web version, web 2.0 applications, web host, and on-screen web properties. A web 2.0 application, blog, hosted by Blogger was proposed to be used as the developing platform after comparing with their alternatives: Wordpress, wikis, and web 1.0. Besides, web widgets and hypertext were also analysed to be made available on the blogs as part of the user interface design. With the injection of Web widgets and hypertext into the blogs, WeCWI attempts to offer a technological enhanced ELT solution to overcome the poor writing skill among L2 learners.

Keywords: WeCWI, web 1.0, web 2.0, blog, wiki, Blogger, Wordpress, widget, hypertext

1.0 INTRODUCTION

An e-learning course should be designed to match the users' needs closely and be adapted during the course progression (Graf & List, 2005). Similarly, in this context, the writing needs of UiTM students have been emphasised beyond the existing writing curriculum (Mah & Khor, 2015). They also preferred using blog and digital forum as online writing program learning tools. In addition, to facilitate their L2 writing process, the students preferred some theoretical and pedagogical highlights based on the instructional tool's content, instructor, and peers. Besides, their needs inside and outside the classroom were revealed from a study conducted on the students' readiness in using web-based resources in UiTM Penang Branch.

Furthermore, from the 13 interviews conducted randomly with electrical, mechanical, and civil engineering students in UiTM by Peridah Bahari and Salina Hamed (2008), they perceived themselves as apprentices in computer usage; web-based resources were also found useful and informational. Since the students could get the latest information from the world of digital education, they were found having the similar view that their lecturers could offer more in-depth explanations through the reference of countless web-based resources.

2.0 METHODOLOGY

This study conducted a systematic literature review using comprehensive electronic search via *Google Scholar* and other research databases on the keywords such as “WeCWI”, “web 1.0”, “web 2.0”, “blog”, “wiki”, “Blogger”, “Wordpress”, “widget”, and “hyperlink” available from the title and/or abstract of the articles. This approach helps to detect the key concepts of the identified research scope in this study. It is useful for one to have a more distinctive picture of the gaps and opportunities with regards to the respective field, which entail the conducts of mapping, consolidation and evaluation of the specified fields (Tranfield, Denyer, & Smart, 2003). Hence, in line with the research objective, this study opted to conduct a comparative systematic review on the literature in relation to the comparative features between the two salient alternatives of web version (web 1.0 and web 2.0), web 2.0 application (blog and wiki), web host (Blogger and Wordpress), and on-screen web properties (widget and hypertext).

3.0 LITERATURE REVIEW

3.1 *Web 1.0 and Web 2.0*

Vinton Cerf, Yogen Dalal and Carl Sunshine coined the term “internet” in 1974 which refers to the internet protocol (TCP/IP) network, a global transmission control protocol that allows one to send information back and forth (California Emerging Technology Fund, 2009). Sir Tim Berners-Lee created the World Wide Web or the “web” as an application built on top of the internet to connect hypertext pages. These web pages may encompass different multimedia components like images, text, and videos, while hyperlinks are used for navigation purpose. Web 1.0 is the internet in the age of submissive and static viewing of content pages. Since the fall of 2001, web 2.0 has evolved as an active knowledge creation and sharing platform (Alam, 2009), which thus triggers the emergence of web 3.0 in 2010 (Satalkar, 2012). It should be noted that web 2.0 is defined as an attitude but not a technology, explaining the emergence of the web 2.0 as a social revolution instead of a technological revolution (Downes, 2005).

The concept of web 2.0 began with a conference brainstorming session between O'Reilly and MediaLive International. According to O'Reilly (2005), blogs and wikis are the new generation of web 2.0 tools that offer a platform enabling the laymen to create, modify, interact, and share the web content directly. Hence, as defined by Lewis (2009), web 2.0 has democratised completely the limitations of web 1.0's basic functions. As mentioned by Lewis, the great difference of web 2.0 from web 1.0 is “connectivity”, which is the innovative asset of web 2.0 due to its interactive information sharing, user-centred design, inter-operability feature, collaborative capability on the web, and high association with numerous types of web widgets (Satalkar, 2012). The learning approach in relation to web 2.0 practices concerns more with cognitivist in nature; for instance, processes of self-publishing and reflective blogging support this type of metacognition (Conole & Alevizou, 2010).

Table 1: Differences in Function, Authority, Content, Control, and Examples between web 1.0 and web 2.0 (Huang, 2013)

Aspect	Differences	
	web 1.0	web 2.0
Authority	Web master	Everyone
Function	Read and download	Upload and share
Control	Controlled by web master	Controlled by users
Content	Definite content for organisational purposes	User-defined content
Example	Individual website	Blog, digital portfolio, wiki

3.2 Blog and Wiki

The optimal choice of web service is critical to increase the connectivity among the content, learners, and instructor. Thus, there are specific considerations for the choice made in developing an e-learning platform. Despite its prior introduction in the web world, web 1.0 is found inappropriate as according to Lewis (2009), its applications only come with three basic functions: content searches (web browser), content creation (websites), and communication (email). In addition, web 3.0 is also found unsuitable due to its functions like a “semantic web” as coined by Tim Berners-Lee (Satalkar, 2012). Thus, web 2.0 was selected as the developing platform of WeCWI’s instructional tools due to its overall features as user-generated content. This is further defined as e-learning 2.0 whereby learning is made possible through digital connections and peer collaboration via web 2.0. Amongst the many available web 2.0 tools for language learning such as blogs, wikis, podcasts, digital portfolio, and forum, Lewis (2009) emphasised on the blogs and wikis as the most well-accepted tools.

Chao and Huang (2007) recommended Wiki as a form-focussed approach while blog for fluency-first approach in an effort to identify whether wiki or blog can be a better medium grounded on Vygotsky’s (1978) theory of scaffolding to empower writers in terms of their writing process and writing outcomes. Both web 2.0 tools have the scaffolding effects in L2 learning process in terms of function; however, in terms of focus, blog is more suitable as reading, writing, publishing, and interacting spaces for individual learning. Wiki is more appropriate for collaborating, editing, and discussing platforms for group learning. Table 2 highlights the differences between wiki and blog in terms of their implementation, activities, and the students’ reflections of writing as reported in Chao and Huang’s (2007) study. Based on the comparisons, blog is an ultimate adaptable tool leveraged to benefit nearly “any” online activities.

Table 2: Comparisons between Using Blogs and Wikis in EFL Classroom (Chao & Huang, 2007)

Comparisons	Blog	Wiki
Implementation	<ul style="list-style-type: none"> • Fluency-first approach 	<ul style="list-style-type: none"> • Focusing-on-form approach
Activities	<ul style="list-style-type: none"> • Publishing space and writing logs • Creating colours and pictures • Personal learning community • Interactive learning community 	<ul style="list-style-type: none"> • Peer editing • Self-awareness-error log • Collaborative writing • Discussion
Learners’ reflections of writing	<ul style="list-style-type: none"> • <i>“Not like writing on paper, the shape of blog often makes me feel comfortable. I volunteer to spend more time reading my articles again and again.”</i> • <i>“Having a blog makes my learning more colourful. My life is always full of studies and taking a</i> 	<ul style="list-style-type: none"> • <i>“To write in the wiki is very convenient.”</i> • <i>“I like to write English in the wiki.”</i> • <i>“I think wiki is a good space that we can practice our English. And it is easy to operate.”</i> • <i>“Wiki helps me to write.”</i>

- break to make something only belongs to me is quite relaxing.”*
- *“Reading others’ writings is an interesting thing. Sometimes I find someone’s writing is humorous and someone writes very well. These all can increase my writing ability.”*
 - *“Besides, by making comments to others or reading others’ article, we could catch others’ advantages and knowing our defects. Anyway, it really increases our writing ability and interests by writing English in the blog. It provides many conveniences more than writing in the paper.”*
 - *“It records everything in the history.”*
 - *“When I saw my article in the web, I felt a sense of achievement.”*
 - *“When I write that article in the wiki, I can be very easy to correct my article. It is very important reason that I like to write in the wiki. Wiki also help me to write. Because peer editing help me a lot. No matter it is correct or not it helps me a lot. That lets me know where I have to enhance in my article.”*
-

Two types of blogging tools are available in common: The software that runs on a web server and generates the blog pages as well as the posting tool on how the comments are published on the software (Mah & Liaw, 2011). Since the WeCWI instructional tools are online in nature, the first type of web-based blogging tool is more pertinent. Justin started the first ever blog namely *Justin’s Links from the Underground* (www.links.net) back in January 1994 and in December 2004. He has been referred to as “the founding father of personal blogging” by The New York Times Magazine (Hall, n.d.). Jorn Barger coined “web” and “log” to become “weblog” in December 1997, which means “logging to the web”. Later in 1999, Peter Merholz playfully broke the word “weblog” into “we blog”; the new term “blog” somehow was born and became as both a verb and also a noun (“It’s the links, stupid,” 2006). Due to the rise in popularity, blog, blogging, bloggers, and the blogosphere are added to the English language lexical items.

Technically, blog is a web page comprising a log or list with links to other web pages that the bloggers found interesting (Martindale & Wiley, 2005; McBride & Cason, 2006; Risdahl, 2006). Blog’s basic unit is the post that comes with a unique permalink to be referenced separately. Similar to the emphasis made by O’Reilly (2005), one of the most highly touted features of the web 2.0 era is blogging, which is referred to as “a replacement for email” and “the next killer application” (Krause, n.d.; Martindale & Wiley, 2005). As reported by NM Incite, its presence took the world by storm when there were already 173,000,000 blogs globally tracked up by October 2011 from 35,771,454 blogs in October 2006 (The Nielsen Company, 2012). 504,082,040 sites were tracked globally if compared with the web server survey in October 2011 by Netcraft (“October 2011 web server survey,” 2011) with the presence of one blog being born after the creation of three websites.

3.3 Blogger and Wordpress

To provide an in-depth understanding of what an actual blog constitutes, it is best to take note of the different features between Blogger and Wordpress, favoured by the people developing the blogs pertaining to their own passion and intention. Penn Schoen Berland conducted a blogger survey among 4114 bloggers globally from 13 September till 4 October, 2011 (Technorati Media, 2011). Five categories of bloggers were made including hobbyist, professional part-and full-timers, corporate, and entrepreneurs. The results showed

Wordpress and Blogger/Blogspot as the two most popular blog hosting services. The hobbyists prefer Blogger/Blogspot the most while Wordpress is the entrepreneurs' favourite.

Five aspects of Blogger's features that are limited in Wordpress have been summarised in Table 3 based on Rae (2013)'s blogging experiences using both Wordpress and Blogger. Though majority of the bloggers prefer Wordpress due to its unique attributes that are absent in Blogger, yet Blogger is still a better option as the blog hosts of WeCWI instructional tools based on three justifications: (1) popularity among learners in general, (2) individualised server that allows the registered users to store their blogs with personalised blog addresses like <http://yourname.blogspot.com>, and (3) the Google ownership since early 2003 (Mah & Liaw, 2011).

Table 3: Comparisons between Wordpress and Blogger as the Blog Hosting Platform for WeCWI Instructional Tools (Rae, 2013)

Aspects	Wordpress	Blogger
User Experience	<ul style="list-style-type: none"> Multiple choices offered to the blogger may seem overwhelming in initial setup process. 	<ul style="list-style-type: none"> The setup process is extremely simplistic.
Template Modifications	<ul style="list-style-type: none"> More options for creative modifications are subject to paid upgrades. It is very limited in blog interface design depending on the chosen template. Blog size is fixed. 	<ul style="list-style-type: none"> The highly customizable and flexible template modifications are fundamental for embedding the web widgets and hypertext. Blog size, font size, type, and colour, number of column, section, and page are customisable.
Overall Cost	<ul style="list-style-type: none"> Annual costs are imposed on the blogger for domain host maintenance. Variable paid upgrades are offered through Wordpress.com. 	<ul style="list-style-type: none"> All instructors and learners can use this blogging platform for teaching and learning purposes without financial limitations. It is totally free and no upgrading fees.
Web widgets	<ul style="list-style-type: none"> It can only be added to a column. Choices of web widgets are limited. 	<ul style="list-style-type: none"> They can be embedded manually to any part of the blog content area. Web widgets are available within and outside Blogger.
Comments	<ul style="list-style-type: none"> Technical savvy is the criteria needed to set up the comment reply function. 	<ul style="list-style-type: none"> Each comment comes with built-in reply feature.

3.4 Web Widget and Hypertext

3.4.1 Web Widgets

The word "widget" was first introduced in a Broadway play namely *Beggar on Horseback* in 1924 as an object with no real value (Kennedy, 2007b). In 1988, the first widget come into the cyber world to describe user interface construction components within the X Toolkit by the Project Athena team at MIT, Ralph Swick and Mark Ackerman (Kennedy, 2007a). Widget has a variety of shapes, sizes, functions, and terms such as desktop widget, web widget, web button, web badge, and plug-in (Kennedy, 2007b) in describing small applications with all kinds of functions run on the computer that some are downloadable (Pettward, 2009). As a type of single-purpose application, widgets operates in a completely

stand-alone fashion installed within a framework handling basic functions and services (Wilson, Sharples, & Griffiths, 2007). Web widgets and desktop widgets are the two major types of widgets that have been part of a trend towards the convergence of web and desktop application architecture (Wilson et al., 2007). Since the instructional tools are using blog as a hosting platform, desktop widgets fall beyond the scope of this study.

Microsoft and *Google* opted for “gadget” as their web products to refrain from the *Apple* term of “web widget” since the trademark on the term “web widget” had been owned by *Apple* for “software for use in creating other internet and web-based software” (Kennedy, 2007b). From the technical perspective, web widgets are derived from the idea of code reuse created in HTML, JavaScript, Flash, or Cascading Style Sheets (CSS). *Netvibes* and *PageFlakes* are among the widget engines that have emerged to provide a platform to coordinate multiple widgets (Wilson et al., 2007). As stated by Mäkelä et al. (2007), the most tempting feature of web widgets is the ability to combine of on-line data resources with site data to create mash-ups, which is a web application that uses and combines data, presentation or functionality from various sources to create new services like Google Maps web widget. Furthermore, web widgets can be united together and published as new components like *Yahoo! Pipes* service (Mäkelä et al., 2007).

As mentioned by Mäkelä et al. (2007), a web widget is a compact reusable software component that can be embedded on a web page or application to deliver specific functionality. The application of web widgets on a web-based instructional tool is to deliver a miniaturised version of a specific piece of content beyond the primary web site. Besides web widget that comes with rich content virtually and added features, a click of mouse on the specific part of the web widget with hyperlink will lead back to its primary web page. A good use of widgets can enhance the organisation and navigation of blog content (Chen, 2009); for instance, adding an instant messaging tool to a blog enables live interaction among the site visitors (Wilson et al., 2007). However, Fiaidhi (2011) has highlighted that running any widget may need the activation of the web browser.

3.4.2 Hypertext

“Hypertext” as coined in 1965 by Theodor H. Nelson (Feizabadi, 1998; Landow, 1992; Mulzer & Zhang, n.d.; Nielsen, 1995) refers to “a body of written or pictorial material interconnected in such a complex way that it could not conveniently be presented or represented on paper” (Nelson, 2003, p. 144). The history of hypertext began as early as 1945 when “memory extender” or *Memex* was proposed in an article *As We May Think* published in *The Atlantic* (Bush, 1945), which is earlier than the introduction of web widget. The ideas for a machine to store any piece of information including graphical and textual forms that could be arbitrarily linked to any other piece were outlined by him. Later in the next two years, a team of researchers led by Dr. Andries van Dam from Brown University developed the first hypertext-based system (Feizabadi, 1998).

In 1989, Berners-Lee proposed a “distributed hypertext system” for the management of general information about accelerators and experiments at CERN (European Center for Nuclear Physics Research) in Geneva, Switzerland (Berners-Lee, 1990). Since then, a rapid growth of hypertext on the internet happened led by the invention of the web by Tim Berners-Lee and his colleagues at CERN in the mid-1990s (Nielsen, 1995). According to Nielsen, hypertext was initiated in 1945, created in the 1960s, cultivated gradually in the 1970s, and materialised finally in the 1980s with an express growth after 1985, ending in a fully established meadow during 1989. Where hypertext prevails, the web is in which nearly every

web page includes links to other pages; both text and images can be used as links to more content ("Hypertext Definition," 2012).

Mulzer and Zhang (n.d.) designed a diagram to illustrate how the hypertext organises the documents to facilitate the computer in locating the items needed. Big rectangles represent the electronic documents, just like the pages of paper documents. The sensitive spots inside the pages are the hypertext and are indicated as the small rectangles. A computer is used to display the pages on its screen. When the reader clicks on a sensitive spot, the sensitive spots are used to switch automatically from one page to another. "Browsing" means the navigation from one page to another. Without knowing where information is stored or any details of its format or organisation, a reader can see the whole web of information as one vast hypertext document. To conclude, a hypertext is a text attached with a link to it. The reader will be directed to the site attached when clicking on the text. Dictionaries and encyclopaedias are the software programs that have long used hypertext in their definitions. With this feature, readers can speedily identify more about specific topics or words ("Hypertext Definition," 2012).

4.0 CONCLUSION

In designing a more effective web-based instructional tool (WBI), the identification of the students' learning styles is essential (Rozhan M. Idrus, 2008) since the incompatibility between the teaching and learning styles in engineering education could lead to poor performance (Felder and Silverman, 1988). As reported by Cheang, Mah and Ch'ng (2010), there are many mismatches between students' learning styles and instructional materials in UiTM Penang Branch. In fact, the students' interest and other affective factors towards the writing instruction are crucial (Noriah Ismail et al., 2012). Thus, instructional tools with different user interfaces, widgetised and non-widgetised for example, are proposed based on two opposing learners' perceptual learning styles, sensing and intuitive. For instance, the widgetised blog mainly embeds web widgets, while the non-widgetised blog mostly displays hypertext with links. The underlying factor of focussing on web widgets or hypertext owes its contrast based on two distinctive visual representations, iconic and symbolic (Bruner, 1966), which correspond with the learners' preferences in information processing through their senses or subconscious minds.

REFERENCES

- Alam, S. N. (2009). *Web 3.0 applications*. Retrieved from <http://www.buzzle.com/articles/web-30-applications.html>
- Berners-Lee, T. (1990). *Information management: A proposal*. CERN. Retrieved from <http://www.w3.org/History/1989/proposal.html>
- Bruner, J. S. (1966). *Toward a theory of instruction*. United States of America: Harvard University Press.
- Bush, V. (1945). As we may think. *The Atlantic*. Retrieved from <http://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/>
- California Emerging Technology Fund. (2009). *History of the internet*. Retrieved from <http://www.getconnectedtoday.com/history>

- Chao, Y. C. J., & Huang, C. K. (2007). The effectiveness of computer-mediated communication on enhancing writing process and writing outcomes: The implementation of blog and wiki in the EFL writing class in Taiwan. In C. Montgomerie & J. Seale (Eds.), *World Conference on Educational Multimedia, Hypermedia and Telecommunications 2007* (pp. 3463–3468). Vancouver: AACE.
- Cheang, E. K., Mah, B. Y., & Ch'ng, P. E. (2010). Preference of learning style among the diploma students of UiTM Penang: An overview. *Social and Management Research Journal*, 7(1), 55–66.
- Chen, S. (2009). Can blogging help cataloging? Using a blog and other Web 2.0 tools to enhance cataloging section activities. *Library Resources & Technical Services*, 53(4), 251–260.
- Conole, G., & Alevizou, P. (2010). *A literature review of the use of web 2.0 tools in higher education*. Milton Keynes. Retrieved from http://www.heacademy.ac.uk/assets/EvidenceNet/Conole_Alevizou_2010.pdf
- Downes, S. (2005). The web 2.0. *eLearn magazine*, 2005(10)
- Feizabadi, S. (1998). History of the World Wide Web. In M. Abrams (Ed.), *World Wide Web: Beyond the basics*. United States: Prentice Hall. Retrieved from http://ei.cs.vt.edu/book/chap1/htx_hist.html
- Felder, R. M., & Silverman, L. K. (1988). Learning and teaching styles in engineering education. *Engineering Education*, 78(7), 674–681. Retrieved from <http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Papers/LS-1988.pdf>
- Fiaidhi, J. (2011). Towards developing installable e-Learning objects utilizing the emerging technologies in calm computing and ubiquitous learning. *International Journal of U- and E- Service, Science and Technology*, 4(1). Retrieved from http://www.sersc.org/journals/IJUNESST/vol4_no1/2.pdf
- Graf, S., & List, B. (2005). An evaluation of open source e-learning platforms stressing adaptation issues. In *Fifth IEEE International Conference on Advanced Learning Technologies* (pp. 163–165). Kaohsiung: IEEE. Retrieved from <http://www.campussource.de/aktuelles/docs/icalt2005.pdf>
- Hall, J. A. (n.d.). *Justin's links*. Retrieved from <http://www.links.net/re/>
- Huang, S. (2013). *Web 2.0 and emerging learning technologies*. Retrieved from http://en.wikibooks.org/wiki/Web_2.0_and_Emerging_Learning_Technologies/Web_2.0_Tools
- Hypertext Definition*. (2012). Retrieved from <http://www.techterms.com/definition/hypertext>
- It's the links, stupid. (2006, April). *The Economist*. Retrieved from <http://www.economist.com/node/6794172>
- Kennedy, N. (2007a). *A brief widget history*. Retrieved from <http://www.niallkennedy.com/blog/2007/09/widget-timeline.html>

- Kennedy, N. (2007b). *Widget nomenclature*. Retrieved from <http://www.niallkennedy.com/blog/2007/09/widget-nomenclature.html>
- Krause, S. D. (n.d.). *When blogging goes bad: A cautionary tale about blogs, email lists, discussion, and interaction*. Retrieved from <http://english.ttu.edu/KAIROS/9.1/praxis/krause/index.html#writingeducators>
- Lewis, G. (2009). *Bringing technology into the classroom*. Oxford: Oxford University Press.
- Mah, B. Y., & Khor, G. S. (2015). Poor writing skill among UiTM students: A qualitative systematic review of literature on SIL's learner domain. *UPALS Language Colloquium 2015 Proceedings* (pp. 23-34). Penang, Malaysia: Universiti Teknologi MARA Penang Branch.
- Mah, B. Y., & Liaw, S. C. (2011). Are you ready to blog? In Faizah Mohamad (Ed.), *Technology in ESL classrooms* (pp. 33–54). Selangor: University Publication Centre, Universiti Teknologi MARA.
- Mäkelä, E., Viljanen, K., Alm, O., Tuominen, J., Valkeapää, O., Kauppinen, T., ... Hyvönen, E. (2007). Enabling the semantic Web with ready-to-use Web widgets. In L. Nixon, R. Cuel, & C. Bergamini (Eds.), *Proceedings of the First Industrial Results of Semantic Technologies Workshop* (Vol. 293, pp. 56–69). CEUR Workshop Proceedings.
- Martindale, T., & Wiley, D. A. (2005). Using weblogs in scholarship and teaching. *TechTrends*, 49(2), 55–61.
- McBride, N., & Cason, J. (2006). *Teach yourself blogging*. United Kingdom: Hodder Education.
- Mulzer, W., & Zhang, S. (n.d.). *The little history of World Wide Web*. Retrieved from <http://www.inf.fu-berlin.de/lehre/SS01/hc/www/WWWhistory.html>
- Nelson, T. H. (2003). A file structure for the complex, the changing, and the indeterminate. In Noah Wardrip-Fruin & N. Montfort (Eds.), *The New Media Reader* (p. 144). United States: MIT Press.
- Netcraft. (2011). *October 2011 Web server survey*. Retrieved July 16, 2013, from <http://news.netcraft.com/archives/2011/10/06/october-2011-web-server-survey.html>
- Nielsen, J. (1995). History of hypertext. In *Multimedia and hypertext: The internet and beyond*. San Francisco: Morgan Kaufmann. Retrieved from http://ei.cs.vt.edu/book/chap1/htx_hist.html
- Noriah Ismail, Saadiyah Darus, & Supyan Hussin. (2012). ESL tertiary students' writing needs: A framework for a supplementary online writing program. *AJTLHE*, 4(2), 61–78.
- O'Reilly, T. (2005). *What is web 2.0: Design patterns and business models for the next generation of software*. Retrieved from <http://oreilly.com/lpt/a/6228>
- Peridah Bahari, & Salina Hamed. (2008). Students' view on using web-based resources in learning: Qualitative study. *ESTEEM Academic Journal*, 4, 119–131.

- Pettiward, J. (2009). *Widget*. Retrieved from http://www.bbc.co.uk/worldservice/learningenglish/language/uptodate/2009/06/090630_uptodate_widget.shtml
- Rae, T. (2013). *Wordpress.com vs Blogger*. Retrieved from <http://traezdesigns.blogspot.com/2013/03/wordpresscom-vs-blogger.html>
- Risdahl, A. S. (2006). *The everything blogging book*. Avon: Adams Media.
- Rozhan M. Idrus. (2008). Transforming engineering learning via technogogy. In *5th WSEAS/IASME International Conference on Engineering Education*. Heraklion: World Scientific and Engineering Academy and Society.
- Satalkar, B. (2012). Web 3.0 examples. Retrieved from <http://www.buzzle.com/articles/web30-examples.html>
- Technorati Media. (2011). *State of the blogosphere 2011: Introduction and methodology*. Retrieved from <http://technorati.com/social-media/article/state-of-the-blogosphere-2011-introduction>
- The Nielsen Company. (2012). *Buzz in the blogosphere: Millions more bloggers and blog readers*. Retrieved from <http://www.nielsen.com/us/en/newswire/2012/buzz-in-the-blogosphere-millions-more-bloggers-and-blog-readers.html>
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14, 207–222. Retrieved from <http://www.cebma.org/wp-content/uploads/Tranfield-et-al-Towards-a-Methodology-for-Developing-Evidence-Informed-Management.pdf>
- Vygotsky, L. S. (1978). *Interaction between learning and development. Mind and society*. Cambridge: Harvard University Press. Retrieved from <http://www.psy.cmu.edu/~sieglar/vygotsky78.pdf>
- Wilson, S., Sharples, P., & Griffiths, D. (2007). Extending IMS learning design services using widgets: Initial findings and proposed architecture. In *Proceedings of the 3rd TENCompetence Open Workshop on Current Research on IMS Learning Design and Lifelong Competence Development Infrastructures*. Retrieved from <http://hdl.handle.net/1820/963>