

# How to Design Good Educational Blogs in LMS?

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**Abstract:** Social communication tools in E-Learning have seen monumental growth in the last decade. Blogs as one of the most important tools have a huge contribution in social communication in Learning Management Systems (LMS), and the majority of research incorporating blogs in LMS reveals the effectivity of them. Thus, the quality of blog design becomes the main factor that determines the success of educational blogs. Although a literature review of guidelines and web page standards contain a variety of categories to cover most features of web page design, not all of them can be used to create an effective blog. There is a need to further explore these technologies in educational contexts and identify the criteria of combining them in unit design. The main purpose of this paper is identifying the educational blogs criteria by analysing the literature, research and the reviews of experts in the field. The study outcomes include the final list of blogs criteria which are classified into 6 categories and 80 indicators.

## 1 INTRODUCTION

A weblog is defined in short as a personal website that usually provides the opportunity to discuss topics with historical entries that are as a rule brief and often include subjects' summaries and links on the blog as well as personal opinions and recommended references. Photo and video blogs are blogs with posts of pictures and videos, respectively, supported by text (Vaezi et al., 2011); (Shih, 2010); (Tekinarlan, 2008). Pedagogical blogs have many advantages, such as self-editorship, free space to present students' view, quick and easy updates, free access to the discussion topics and indexing (Ko and Pu, 2011); (Farmer et al., 2008). Moreover, students can be encouraged to discuss what interests them, and can post their personal comments on other students' blogs. (Ozkan, 2011); (Reupert and Dalgarno, 2011); (Farmer et al., 2008).

On the one hand, some researchers focus on exploring the factors influencing blogging interaction (Ko and Pu, 2011); (Kuzu, 2011); (Vaezi et al., 2011); (Wu and Wu, 2011); (Hourigan and Murray, 2010); (Al-Ani et al., 2008); (Burke and Oomen-Early, 2008); (Chong, 2008). All results support the new trend in e-learning and effective blogging as communicative tools for both individual self-expression and provide free space for students to learn and interact.

On the other hand, Saeed and Yang (2008), reported that, 40.7% of the students never participated in blogging activity, and 70% of all participations shared only one post per week. Stone (2012), were analyzed 505 blogs results indicates that not all students completed each of the 15 blogs task requested of them, only 57.1% of the total entries (885) were actually posted by students. The purpose of this paper is identifying a set of blog criteria based on web page design guidelines and blog literature. These criteria will assist students in improving interaction among themselves and will help e-learning designers in developing more effective blogs in LMS. We present the details of a study conducted to identify educational blog criteria in LMS. This study consisted of three phases. The first phase was a thorough literature research to collect the initial list of blogs criteria. The second phase was the classification of the blogs criteria in six categories with specific indicators. The last phase was to conduct a survey with experts in instructional technology and e-learning to evaluate the importance of the proposed blogs criteria.

## 2 EDUCATIONAL BLOGS

Educational blogs are quite different from traditional web pages, and they need more specific criteria to

ensure that can be used effectively in an e-learning platform (Tan et al., 2010). We conducted a detailed literature review to collect blog criteria. These criteria are then classified in six main categories that we discuss in some detail in the next sections.

## 2.1 Blog Design

Design features refer to how blog look and feel. This study found three elements for design: font, color and frames. Font is one of the main factors affecting blog design. Font should be visible without having to install new fonts. Moreover, color in educational blogs is used not only to make blogs more attractive, but also to improve readability and focus on the specific information in the blog (Vaezi et al., 2011); (Tarasewich, 2008); (Viehland and Zhao, 2008); (Yousef, 2008); (Powell, 2002); (Nielsen, 2002); (Nielsen and Tahir, 2001); (Gibbs et al., 2000); (Lee and Boling, 1999).

## 2.2 Navigation

The navigation style helps students to achieve their blog objective. It is important that students are able to find the navigation feature easily (Wu and Wu, 2011). Good design of navigation tools help students to find the important topics and discussion via blog effectively. In this study identified three components links, menu and search box (Tan and Tan, 2010).

## 2.3 Media Use

Multimedia is an extra option for students and teacher (Derry, 2007). It can be defined as the incorporation of communication media such as image, audio and video in the blogging to present information (Croizat et al., 2007); (Hartsell and Yuen, 2006); (Bijnens et al., 2004); (Leidig, 1999).

## 2.4 Usability

According to the International Standards Organization (ISO) web usability is defined as "the extent to which a site can be used by a specified group of users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use" (Wu and Wu, 2011); (Tse et al., 2010); (Whitehead, 2006); (Nielsen, 2002).

## 2.5 Content

A good content design not only improves the learners' attention and increases their performance,

but also improves their knowledge and skills (Schoneboom, 2010); (Krunić and Ružič-Dimitrijević, 2008); (Rieh, 2002); (Lee et al., 1996).

## 2.6 Accessibility

The purposes of accessibility are that students can perceive, understand, navigate, and interact with the blog, and that they can browse all content available on the blog and meet different technical needs to support loading speed, download ability and compatibility with major browsers (Ozkan, 2011); (Ha et al., 2007); (Hassan and Li 2001).

## 3 STUDY RESULTS AND DISCUSSION

In this study, we grouped the list of 80 indicators in 6 categories and 19 main criteria. We then conducted a survey in which we asked 19 e-learning and instructional technology experts to rate each indicator on a 5-point Likert scale from not important (1) to very important (5). The evaluators could also use a decimal value like (3.75). The statistical results of this survey show that the most important categories were accessibility and navigation, while the least important ones were blog design and content. In the following sections, we discuss the results of this study based on each category.

### 3.1 Blog Design

Blog design category included three main criteria with 13 indicators. See Table 1.

Table 1: Blog design category (N=19).

Blog Design Indicators	M	SD
1. Use commonly-supported font styles (e.g., Times New Roman, Arial, Calibri, and Arial Black).	3.54	0.926
<b>2. Titles/Headings font size (16 to 24) Bold.</b>	<b>3.29</b>	<b>0.783</b>
3. Body text font size (14 to 20) Normal.	3.45	0.872
4. Don't use more than 3 font types in the same Blog.	3.89	0.792
<b>5. Use high-contrast text and background colors so that type is as legible as possible. For Ex (Black text with White Background).</b>	<b>4.34</b>	<b>0.726</b>
6. Using mixture of upper and lower case for text.	3.62	1.158
<b>Font Indicator means average</b>	<b>3.69</b>	
7. Sharp color contrast between background and foreground.	3.86	0.843
8. Use color for different functional area (Title, Menu and hyperlinks).	3.63	0.915
9. Use of light color (white / yellow) for background.	3.25	1.070

Table 1: Blog design category (N=19) (Cont.).

Blog Design Indicators	M	SD
10. Minimum 2 color, Maximum 4 color except for photo and graphic.	3.71	0.680
11. Color can be used to highlight text or graphics to make them stand out.	3.68	0.798
12. Avoid the use of complementary colors (e.g., blue/orange, red/green, violet/yellow)	3.50	1.054
<b>Color Indicator means average</b>	<b>3.60</b>	
13. Use templates rather than frames to avoid confusing users, or if frames are used, be sure to title and label them to identify areas of changing information	3.39	1.021
<b>Blog Design Indicator Average means</b>	<b>3.63</b>	

In the statistical results font is ranging between M=3.29 and 4.34 which indicate that experts accepted these indicators. High contrast between text and background is a critical issue that may influence the value of blog. The second high mean of this category is Color and Background with a range of M=3.25 to 3.86. As well as, the third criteria frames obtain M=3.39.

### 3.2 Navigation

The navigation category included three main criteria with 11 indicators. See Table 2.

Table 2: Navigation category (N=19).

Navigation Indicators	M	SD
14. Begin links with the information-carrying word, because users often scan through the first word or two of links to compare them.	3.61	0.926
15. Clearly identify items that are links by using visual cues (e.g., underlining, a change of item color when cursor is hovered, or a change of cursor image on hover, etc.	4.18	0.831
<b>16. Accurate and up-to-date links.</b>	<b>4.64</b>	<b>0.548</b>
<b>17. Links should lead directly to the detailed page for the discussion topic.</b>	<b>4.42</b>	<b>0.765</b>
18. Input boxes should be wide enough: Allow enough space for at least 30 characters in the font size used by most of the users.	4.05	0.705
<b>Links Indicator means average</b>	<b>4.18</b>	
19. Menu / List of contents on each page of blog.	4.08	0.765
<b>20. Menu includes blog map.</b>	<b>3.37</b>	<b>1.179</b>
21. Using simple design for menu.	4.22	0.815
<b>22. Navigation located in the same place of each page of blog.</b>	<b>4.68</b>	<b>0.436</b>
<b>Menu Indicator means average</b>	<b>4.09</b>	
23. Give users an input box on the blog to enter search queries, instead of just giving them a link to a search page.	3.97	1.019
24. Search box should be placed at the top of page, left or right of the blog.	3.89	0.981
<b>Search Box Indicator means average</b>	<b>3.93</b>	
<b>Navigation Average</b>	<b>4.10</b>	

According to the results in this table, it can be

clearly seen that indicators 16, 17, 15 and 18 obtained the highest mean scores of 4.64, 4.42, 4.18 and 4.05, respectively, which indicated that experts give the helpful links high level to support students to be able to find more information and navigation feature easily. The second point to note is indicators 22, 21 and 19 obtained the highest mean scores of 4.68, 4.22 and 4.08 respectively that referred to importance of a menu design features such as simple design, including a list of content to improve the students, navigation.

### 3.3 Media Use

The media use category included three main criteria with 16 indicators. See Table 3.

Table 3: Media use category (N=19).

Media Use Indicators	M	SD
25. Control features for audio file where appropriate, for example, Play, repeat, volume, stop and pause.	3.89	0.897
<b>26. The sound shall be audible and intelligible.</b>	<b>4.24</b>	<b>0.978</b>
27. Easy to download.	4.00	1.076
<b>Audio Indicator means average</b>	<b>4.04</b>	
28. Minimum Video resolution (Pixels) 320 * 240.	3.68	0.892
29. Standard Video format be offered as a "HTML5-compatible video".	3.89	0.804
30. Use short video clips, No more than 15-minute clips.	4.08	0.799
31. Avoid rapid cuts or changes of scenery.	3.29	1.092
32. Keep videos small for easier transfer, e.g., to up to 10 M.B.	3.92	0.892
<b>33. Control features for video clip where appropriate, for example, Play, repeat, full screen, slowdown, stop and pause.</b>	<b>4.21</b>	<b>0.713</b>
<b>Video Indicator means average</b>	<b>3.85</b>	
<b>34. Use graphics / Images for emphasizing the information.</b>	<b>4.50</b>	<b>0.688</b>
35. Use graphics / Images for attracting attention.	3.87	0.856
36. Using "thumbnails" for showing large images.	3.95	0.816
37. Using small images to be easy to loading.	3.91	0.648
38. Make sure all the key components of the graphical images are labeled.	3.76	1.002
39. Use simple and clear images; avoid images with too much detail.	3.61	1.008
<b>40. Use graphics to show real content, not just to decorate blog.</b>	<b>4.51</b>	<b>0.588</b>
<b>Image Indicator means average</b>	<b>4.01</b>	
<b>Media use means average</b>	<b>3.96</b>	

Audio indicator 26 and 27 obtained a high mean score of 4.24 and 4, respectively, indicating that audible and intelligible sound is a pivotal indicator that may influence the effectiveness of audio blogs

in LMS. Moreover, Image criteria indicators 40 and 34 obtained a high main score of 4.51 and 4.5, respectively, indicating that image can be a source of information, learning and present every bit as powerful as the written text. Furthermore, Video indicators 33 and 30 obtained a high mean score 4.21 and 4.08, respectively, that refers to the importance of control features for video clip and using short video clips is a crucial indicator that may influence the effectiveness of video blog learning.

### 3.4 Usability

The usability category included two main criteria with 8 indicators. See Table 4.

Table 4: Usability category (N=19).

Usability Design Indicators	M	SD
41. Include some information how to use this blog.	3.76	1.105
42. Include some recommendation about search and old posting finding.	3.82	0.831
43. Help link should be available.	3.97	1.175
<b>Help Indicator means average</b>	3.85	
44. Blog length should be no longer than 2 screens.	3.38	1.013
45. Make sure the important content is visible at a 800 * 600 resolution without having to scroll.	3.87	1.024
<b>46. Design should be simple and uncluttered.</b>	<b>4.50</b>	<b>0.743</b>
<b>47. Include a tag line that explicitly summarizes what the blog does.</b>	<b>4.14</b>	<b>0.792</b>
<b>48. Avoid horizontal scrolling at 1024x768. Horizontal scrolling invariably causes usability issues, the biggest being that users don't notice the scrollbar and miss seeing content that is scrolled off of the screen.</b>	<b>4.08</b>	<b>0.831</b>
<b>Layout Indicator means average</b>	4.0	
<b>Usability Design Indicator Average</b>	3.94	

The most noticeable thing is that blog layout indicators 46, 47 and 48, obtained the high mean scores of 4.50, 4.14, and 4.08, respectively, which indicate the importance of a simple and uncluttered of blog.

### 3.5 Content

The content category included five main criteria with 22 indicators as listed in Table 5.

Blog authority obtained high mean scores ranging from M= 4.16 to 4.58, which indicate that the important of copyright issue for the content. Moreover, blog information indicators 64, 62 and 63

Table 5: Content category (N=19)

Content Indicators	M	SD
49. Blog title should attract the audience and be easy to understand, and clearly convey the purpose of the blog.	<b>4.34</b>	<b>0.563</b>
50. Include a short description of the topic in blog title.	3.98	0.729
51. Blog information should be depth of subject coverage.	3.67	0.833
52. Blog should be intrinsic value of information.	3.86	1.008
<b>Blog Scope means average</b>	3.96	
53. Blog must give references or sources of the information.	<b>4.58</b>	<b>0.591</b>
54. Copyright holder statement.	4.18	0.935
55. Comments should be reviewed and ensured that they are correct.	4.16	0.859
<b>Authority means average</b>	4.31	
56. Blog should be standing clearly goals /aims.	<b>4.18</b>	<b>0.782</b>
57. Invite students to set their own goals for blog usage - above and beyond a quantity measurement.	3.95	0.999
58. Information should be presented in an objective manner.	3.53	1.045
59. Use the "Bloom Taxonomy" instructional objective design.	3.38	0.853
60. Each blog should have at most three objectives.	3.18	1.003
61. Each objective should focus on only one task.	<b>3.00</b>	<b>1.136</b>
<b>Objective means average</b>	3.54	
62. Blogs content must be free from spelling, grammatical, syntax errors, and typos.	4.21	1.068
63. Sequence of lessons information and instruction are logical and clear.	4.14	0.880
64. Blog must be written at a level appropriate to the reader of the content.	<b>4.29</b>	<b>0.878</b>
65. The content is informative.	4.00	0.960
66. Separation between information and opinion content.	3.93	0.772
67. Choices of media type for information, for example, text only, audio or video.	3.79	1.058
<b>Information means average</b>	4.06	
68. Blogs body should be a goal, not a fixed rule: a paragraph should preferably not have more 6 sentences.	<b>3.03</b>	<b>0.950</b>
69. Heading and bulleted lists are used so that content can be easily scanned.	3.84	0.862
70. Use the typography and skimming layout, for example, bold font and highlighted words.	3.76	0.996
<b>Scanability means average</b>	3.45	
<b>Content means average</b>	3.75	

obtained a high score mean of 4.29, 4.21 and 4.14, respectively, indicating that content of a blog should be free from spelling, grammatical, or syntax errors, and typos. The blog scope indicator 49 obtained a high mean score (M= 4.34) which indicating that, the important of clear title. Furthermore, the blog objective indicator 56 obtained a high score mean

M= 4.18 indicating the importance of clear blog aims to increase the influence of blog content value.

### 3.6 Accessibility

The accessibility category included three main criteria with 11 indicators as listed in Table 6.

Table 6: Accessibility category (N=19).

Accessibility Indicators	M	SD
71. Blog does not take a long time to load.	4.39	0.836
72. Blog provides a "help feature" or instructions on its use.	3.74	1.093
<b>73. Blog does not require special "plug-ins" or other types of special viewing helpers. If it does, this is clearly indicated.</b>	<b>4.16</b>	<b>1.001</b>
74. Ensure there is adequate technical support available.	4.00	1.088
<b>Loading speed means average</b>	<b>4.07</b>	
75. Student should be easily downloading the materials from the blog.	4.01	1.077
76. Use hyperlinks to access the files in LMS.	3.95	0.887
<b>Download ability means average</b>	<b>3.98</b>	
77. Ensure that equivalents for dynamic content are updated when the dynamic content changes.	4.14	0.677
78. Provide the ability to refresh the blog.	4.00	0.918
<b>79. Compatible contents for all main browsers (Internet Explorer, Opera, Firefox, Safari and Google Chrome).</b>	<b>4.87</b>	0.318
80. Clearly identify the target of each link.	4.34	<b>0.828</b>
<b>Browsing means average</b>	<b>4.34</b>	
<b>Accessibility means average</b>	<b>4.16</b>	

The first and most important indicator 79 obtained the highest mean score in the survey of M= 4.87, indicating that compatible content for all main browsers is a critical indicator that may influence the effectiveness and dissemination of the educational blog. Furthermore, download ability indicator 71 obtained (M= 4.39) indicated that the time of uploading blog page is a very important indicator to increase the interaction between students.

## 4 CONCLUSIONS

The purpose of this paper was identifying educational blogs criteria to improve the student's interaction and communication. According to results the accessibility criteria scored 4.16 out of 5. In the

second priority, came navigation category criteria that scored 4.10 indicated that navigation style helps students to achieve their blog objective. followed by category criteria of media use and usability. However, it is surprising thing to note that the amount of importance for learning objective in the literature and research, but was rated low means score of M= 3.54 except, only indicator 56 obtained a mean score M= 4.18 this was the most outstanding that was noted in this study.

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## REFERENCES

- Al-Ani, Ban; Mark, Gloria & Semaan, Bryan (2008). Blogging through Conflict: Sojourners in the Age of Social Media. *ICIC'10, August 19-20, 2010, Copenhagen, Denmark*, ACM 978-1-4503-0108-4/10/08.
- Bijnens, Marie; Vanbuel, Mathy; Verstegen, Soetkin & Young, Clive (2004). Handbook on digital video and audio in education: Creating and using audio and video material for educational purposes. *Education and culture Socrates Minerva*.
- Burke, Sloane & Oomen-Early, Jody (2008). That's blog worthy: ten ways to integrate blogging into the health education classroom. *American Journal of Health Education*, Vol 39, No. 6, 362-364.
- Chong, Eddy K. M. (2008). Harnessing distributed musical expertise through edublogging. *Australian Journal of Teacher Education*, 24(2), 181-194.
- Crozat, Stephane; Trigano, Philippe & Hu, Olivier (2007). Set of criteria for evaluation and design of multimedia applications in *instructional context*. *UMR CNRS 6599 Heudiasyc*.
- Derry, Sharon J. (Editor), (2007). Guidelines for video research in education: Recommendations from an expert panel. Data Research and Development Center (*NORC at the University of Chicago*).
- Farmer, Brett; Yue, Audrey & Brooks, Claire (2008). Using blogging for higher order learning in large cohort university teaching: A case study. *Australasian Journal of Educational Technology*, 24(2), 123-136.
- Gibbs, William J.; Graves, Pat R. & Bernas, Ronan S (2000). Identifying important criteria for multimedia instructional courseware evaluation. *Journal of Computing in Higher Education*, Vol. 12(1), 84-106.
- Ha, Kiryong; Park, Inho; Lee, Jeonwoo & Lee, Doheon (2007). Automated Blog Design System with a

- Population-Based Artificial Immune Algorithm. L.N. de Castro, F.J. Von Zuben, and H. Knidel (Eds.): *ICARIS 2007*, LNCS 4628, pp. 324–335, 2007.
- Hartsell, Taralynn; & Yuen, Steve Chi-Yin(2006).Video streaming in online learning. *ACE Journal*, 14, 1 31-43.
- Hassan, Shahizan; & Li, Feng (2001).Identifying web usability criteria: the “scanmic” model.Mangment science theory, method and practice, research paper No: 2001\3.
- Hourigan, Triona & Murray, Liam (2010). Using blogs to help language students to develop reflective learning strategies: Towards a pedagogical framework. *Australian Journal of Teacher Education*, 26(2), 209-225.
- Ko, Hsiu-Chia & Pu, Hung-Jen (2011). Understanding the Impact of Bloggers’ Self-disclosure on Resilience.ICUIMC ‘11, February 21–23, 2011, Seoul, Korea, *ACM 978-1-4503-0571-6*.
- Krunić, Tanja & Ružić-Dimitrijević, Ljiljana (2008). Online Privacy Analysis and Hints for Its Improvement. *Informing Science and Information Technology*, Volume5.
- Kuzu, Abdullah (2011). Views of pre-service teachers on blog used for instruction and social interaction. *Turkish Online Journal of Distance Education*, Vol 8, 3, 34-51.
- Lee, Sung Heum & Boling, Elizabeth (1999). Screen Design Guidelines for Motivation in Interactive Multimedia Instruction: A Survey and Framework for Designers. *Educational technology*. 39, 19-26.
- Lee, Sung Heum; Choi, Wook & Byun, Hoseung (1996).Criteria for evaluating and selecting multimedia software for instruction. National convention of the association for educational communication and technology (18<sup>th</sup>, Indianapolis), ERIC IR: 018000.
- Leidig, Paul M. (1999) Designing “usable” web sites. *JCSC*, 15, 31-38.
- Nielsen, Jakob & Tahir, Marie (2001). Homepage Usability: 50 Websites Deconstructed. New Riders Indianapolis, Available at <http://www.useit.com/homepageusability/>.
- Nielsen, Jakob (2002). Top Ten Guidelines for Homepage Usability. Available on line at <http://www.useit.com/alertbox/20020512.html>.
- Ozkan, Yonca (2011). Blogging in a teaching skills course for pre-service teachers of English as a second language. *Australasian Journal of Educational Technology*, 27(4), 655-670.
- Powell, Thomas A (2002). Web Design: The Complete Reference. 2nd edn.Osborne/McGraw-Hill Berkeley, CA.
- Reupert, Andrea and Dalgarno, Barney (2011). Using Online Blogs to Develop Student Teachers’ Behaviour Management Approaches. *Australian Journal of Teacher Education*, Vol. 36: Iss. 5, 48-64.
- Rieh, Soo Young (2002). Judgment of information quality and cognitive authority in the Web. *Journal of the American Society for Information Science and Technology*, Vol 53, 2145–161.
- Saeed, Nauman & Yang.Yun (2008).Incorporating blogs, social bookmarks, and podcasts into unit teaching. *Tenth Australasian Computing Education Conference (ACE2008)*, Wollongong, Australia, 2008, 113-118.
- Schoneboom, Abby (2010).Web Design Criteria.LaGuardia Center for Teaching and Learning, available at <http://faculty.lagcc.cuny.edu/ctl>.
- Shih, Ru-Chu (2010). Blended learning using video-based blogs: Public speaking for English as a second language students. *Australasian Journal of Educational Technology*, 26(6), 883-897.
- Stone, Jeffrey A (2012).Using reflective blogs for pedagogical feedback in CS1.*SIGCSE '12 Proceedings of the 43rd ACM technical Symposium on Computer Science Education*, 259-264.
- Tan, Shuyan; Ladyshevsky, Richard & Gardner, Peter (2010).Using blogging to promote clinical reasoning and metacognition in undergraduate physiotherapy fieldwork programs. *Australian Journal of Teacher Education*, 26(3), 355-368.
- Tan, YuhHuann & Tan, Seng-Chee (2010).A metacognitive approach to enhancing Chinese language speaking skills with audioblogs. *Australian Journal of Teacher Education*, Vol. 26, 7, 1075-1089.
- Tarasewich, Peter (2008). An Investigation Into Web Site Design Complexity and Usability Metrics. *Quarterly Journal of Electronic Commerce*, Northeastern University.
- Tekinarslan, Erkan (2008). Blogs: A qualitative investigation into an instructor and undergraduate students’ experiences. *Australasian Journal of Educational Technology*, 24(4), 402-412.
- Tse, ShekKam; Yuen, Allan Hoi Kau; Loh, Elizabeth Ka Yee; Lam, Joseph WaiIp& Ng, Rex Hung Wai (2010). The impact of blogging on Hong Kong primary school students’ bilingual reading literacy. *Australian Journal of Teacher Education*, 26(2), 164-179.
- Vaezi, Reza; Torkzadeh, Gholamreza & Chang, Jerry Chan (2011).Understanding the Influence of Blog on the Development of Social Capital. *The Data base for Advances in Information Systems*, Vol 42, 3, August, 34-45.
- Viehland, Dennis & Zhao, Fei (2008).An Empirical Analysis of Homepage Design in New Zealand. *International Journal of Principles and Applications of Information Science and Technology*, Vol.2, 1, 49-63.
- Whitehead, Christopher C (2006). Evaluating web page and web site usability. *ACM SE'06*, Melbourne, Florida, USA March, 10-12, 788-789.
- Wu, Hui-Ju & Wu, Pai-Lu (2011). Learners’ Perceptions on the Use of Blogs for EFL Learning. *US-China Education Review A* 3 323-330.
- Yousef, Ahmed Mohamed Fahmy (2008). The effect of synchronous and asynchronous communication in cooperative learning across the web to develop students’ of instruction technology skills of communication through the network. Master thesis, Ain shams university, Egypt.