Reading English in the Computer Lab

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Abstract

The present study compares the performance of two TEFL reading classes: one taking place in a regular classroom and the other held in a computer lab, with the learners practicing reading online. The results of an independent samples t-test showed that the difference between the learners' scores on their reading comprehension post-tests and pretests did not differ statistically significantly from one group to the other, indicating that the two groups' progress was similar during the one-term period of instruction. In addition to this, learner interviews and teacher observations showed that some of the challenges of practicing reading in a computer lab included an over-reliance on copy/pasting; time wasted and stress induced due to Internet/technology problems, phobia, or lack of expertise; distractions created through working with technology; and occasional lack of learners' awareness of the benefits of online reading. Yet, despite all this, reading online seems to have benefits which make it worth all the difficulties and extra effort.

1. Background

In EFL situations such as Iran, where English is unlikely to be spoken outside the language classroom, there is usually a consensus that reading is the most important skill our learners need to master. The common argument is that our learners may never be in a position where they will need to communicate orally in English, but it is very likely that they will need to refer to English texts, whether for pleasure, business, or science purposes (see, for example, Noodeh Farahani & Maghami, 2012).

In recent years, with people spending so much time online, the importance of gaining competence in English reading skills has become even more accentuated. More and more people are spending time online, and while only 26.8% of the Internet users are speakers of English (Internet World Stats[1], 2011), W3Techs[2] claims that "English is used by 55.2% of all the websites whose content language we know" (August 27, 2012). This is while immediately after English is German (ibid.), which boasts a mere 6.4% of the currently existing websites!

Yet despite the fact that English reading is increasingly taking place online, most English reading instruction in Iran still seems to focus on offline texts. Even those teachers who do use the Internet for their reading classes mainly use texts that they have downloaded, printed, and copied previous to the class (Marandi, 2002), rather than having their students actually read online in class. This is while such popular reading skills as skimming and scanning, which are usually artificially encouraged or even imposed on the learner in more

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[1] http://www.internetworldstats.com/stats7.htm

[2] http://w3techs.com/technologies/overview/content_language/all

traditional reading classes, take place quite naturally (and often enjoyably) via a simple Google search on the Internet.

Indeed, intuitively there is a lot to be said for using the Internet in an EFL reading class:

It is practically an inexhaustible source of texts on virtually any topic. No matter what the learners are interested in, they are certain to find various references about it on the Internet. Not all online materials are reliable or even safe, of course; in fact, the Internet has been likened to a huge garbage dump, where people's luck in finding the right things depends on where they are digging (Franklin, 1999, cited in Chapelle, 2003). However, a good reading teacher can easily turn this into a further learning opportunity by encouraging the learners to practice critical reading.

Furthermore, online texts are mainly authentic in the sense of their having been written and published on the Net for an authentic audience (Johnston, 1999) and purpose, rather than having been orchestrated for the pedagogic purposes of the English class. Indeed, I would claim that a reading class which makes use of the Internet could itself be considered more authentic due to its similarity to a real-life reading situation, since the Internet is increasingly becoming an indispensable tool for people from all walks of life, and as a result, the average computer-literate person usually spends a rapidly-escalating number of hours on the Internet.

Still another merit claimed for such classes is increased motivation (Butler-Pascoe & Wiburg, 2003). The Internet is notorious for the fascination it exerts over most minds, tempting people to spend much more time browsing through and reading on the Internet than they had initially intended. Shetzer and Warschauer (2000, p. 171) consider it "a major arena for entertainment and socializing" in developed countries. In turn, increased learner motivation and

preferences are generally considered to lead to increased learner autonomy and life-long learning (Healey, 2007) under teacher guidance and supervision (Robb, 2006).

Teachers who make use of the Net for their reading classes can be said to be crossing two hurdles with one leap, since their learners will be gaining in computer literacy skills in addition to learning a language. As Shetzer and Warschauer (2000, p. 171) point out, "The development of literacy and communication skills in new on-line media is critical to success in almost all walks of life." Kasper (2000) elucidates further:

> While traditional definitions of literacy have focused on reading and writing, the definition of literacy today is more complex. The process of becoming literate today involves more than learning how to use language effectively…. Succeeding in a digital, information-oriented society demands multiliteracies, that is, competence in an even more diverse set of functional, academic, critical, and electronic skills. (p. 105)

As we can see, the concept of *literacy* has been replaced by *literacies* and *multiliteracies* (New London Group [NLG], 1996) including such literacies as computer literacy, electronic literacies, technological literacy, media literacy, silicon literacies, etc. (Dakers, 2006; Snyder, 2002; Warschauer, 1999). By including online reading in the class, the English teacher can address both traditional and electronic literacies.

A further concept which deserves mention here is that of WebQuests, as they have been used in the present study, and seem to be an excellent tool for online reading practice.

Conceptualized by Bernie Dodge in 1995, a WebQuest is "an inquiry-oriented lesson format in which most or all the information that learners work with comes from the web" (Dodge, 2007, http://webquest.org/index.php). In

other words, it is an online lesson plan which requires the learners to achieve some kind of task using information which they have to find on the Internet. The WebQuest itself usually provides the learners with only limited information, but guides them how to obtain further information required for the project, usually combining individual accountability with collaborative learning.

WebQuests are, I believe, a wonderful educational idea with a lot of potential, although this potential has remained largely undiscovered in EFL/ESL situations (Egbert & Huff, 2007). A good WebQuest makes the most of the remarkable features of the Net for educational purposes, exemplifying many popular teaching concepts of the present, such as collaboration (Egbert & Huff, 2007; Healey, 2007); scaffolding (Healey, 2007); experiential learning via authentic tasks/projects (Garry, 2001); metacognitive and higher order thinking skills (Garry, 2001; Hanson-Smith, 2007) and so much more, while also indirectly teaching the students how to do research (Hanson-Smith, 2007), as well as how to use the Internet to the best advantage. It is also ideal for encouraging such reading skills as skimming and scanning.

To gain a better understanding of how a WebQuest works, consider the following WebQuest on the hunting of a rare species of whales, designed for L1 Social Studies classes, entitled *To Hunt or Not to Hunt? A WebQuest on Bowhead Whale Hunting in the Arctic*, and to be found at: http://gallagher-family.com/curriculum/webquests/bowhead/webquest/Webquest.html in this WebQuest, the students are divided into groups of three. In each group, one person is to study the hunting of whales from the perspective of an Inuit hunter-i.e., a native of the lands, who have been whale hunters for generations, and look upon whale hunting as part of their heritage. Another person from the group is given a different list of websites to go through, so as to study the

matter from the perspective of an animal activist, and the third person is encouraged to look at the issue from the eyes of an environmental protection agent. After doing so, they are supposed to pool their information and try to come up with a consensus on the following question: "Should all hunting of Bowhead whales be prohibited?" Finally, they must give a multimedia presentation to share their thoughts with their classmates[3].

2. Research Questions

1. Is there any difference between the reading comprehension of Iranian EFL learners who experience paper-based reading vs. those who experience a blend of paper-based and online reading?
2. What are some of the challenges of attempting to introduce online reading in an EFL class?

3. Method

The participants of the present study were 51 undergraduate university students at Alzahra University from two Reading Comprehension I classes, both taught by the researcher. They were all females and were starting the first term of their BA in English Language and Literature. Twenty-three of them belonged to the experimental group, and twenty-eight to the comparison group. The reading classes of both groups were held twice a week for sixteen weeks, each session taking an hour and a half. Except for the first two weeks, when all reading classes took place in a regular classroom, the experimental group had

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[3] A list of useful EFL/ESL WebQuests may be found at Christine Bauer-Ramazani's personal website: http://academics.smcvt.edu/cbauer-ramazani/Links/useful_sites.htm

their class in a regular classroom once a week, and in the computer lab once a week. Those sessions which took place in a regular classroom were similar to the reading classes of the comparison group, with both groups reading mainly short stories, but the sessions which took place in the computer lab were mostly devoted to online reading, to be discussed further below.

The general concern of the Reading Comprehension I class was to help the learners enhance their various reading-related skills, such as "skimming, scanning, recognizing topic sentences and supporting details, predicting what will come next, recognizing transition markers, reading quickly, and evaluating the validity of a source" (Healey, 1999, p. 117). To this end, a variety of techniques were used in class with both groups, following the literature on teaching second/foreign reading skills (cf. Grabe, 2009; Hudson, 2007; Nuttall, 1996). Among these techniques were the following:

Pre-reading activities such as discussing the title and the topic were carried out to create a suitable context for the reading materials. Often, the learners were asked to guess what they thought the text would be about, based on the title. Further on in the text they would be asked to explain their understanding of the text until then, and to further predict what they thought would happen next. They would be asked to provide "clues" from within the text to either support their predictions about what would happen next, or to interpret what had happened so far, and they were asked to identify main ideas and supporting details. This would often lead to discussions about coherence and cohesion in a text, as well as discussions about the decisions a writer makes with regard to word choices and grammar. The learners also discussed and guessed the structure and meanings of words and phrases they had problems with, replied to general and specific questions about the text, and discussed the text generally. Practice using a dictionary to enhance the reading experience also

formed part of the class, as well as practice on how and when *not* to refer to a dictionary. Part of the class time was also devoted to group work, with the class members reading together quickly in small groups of 2-3, in order to form an opinion of the text, and to discuss potential reading/vocabulary problems, which would later be discussed in the class as a whole. Finally, in order to encourage critical reading, discussions about the texts included sharing similar or related experiences; relating the reading materials to personal beliefs and values; inferencing and reading between the lines; and attempting to identify the underlying ideologies of the text.

The above practices formed a great part of the regular reading classes for both groups. The experimental group's classes in the computer lab, however, were conducted somewhat differently. During those sessions, the learners were mainly engaged in online "treasure hunts" and WebQuests.

The treasure hunts were based on topics chosen by the learners; that is, topics which they had personally expressed an interest in pursuing. The class was divided into small groups, and each group would have a set of questions to which they would have to find answers before the other groups. Sometimes the questions were the same for all groups, and at other times they were totally different. The goal was for the learners to do a search on the Internet, and try to find *reliable* online answers to their group's questions, before the other groups had finished. This would usually be followed up by a discussion of some of the answers, with the different groups comparing notes on the strategies they had used to come up with results that were both quick and reliable. And in turn, this usually led quite naturally to discussions on issues such as how to limit or broaden searches using key words and search engine "rules," how to distinguish between reliable and unreliable offline/online sources, how to cite online sources, etc.

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The learners in the experimental group also did a WebQuest as part of their online reading experiences. The WebQuest used for this study was one created at the time by the researcher for her reading classes. It is entitled: *Learning more about the TOEFL and IELTS: A WebQuest for EFL Learners*; and it may be found at: http://susanmarandi.tripod.com/. As the name of this WebQuest implies, it encourages learners to do research about the computer-based TOEFL, the paper-and-pencil TOEFL, and the IELTS exam, in order to make comparisons between them. The learners divided into groups of 3, and each member of the group worked on one of these language tests, attempting to find the replies to a list of questions which appeared in the WebQuest worksheet. Ultimately, the group members had to consult one another and pool their information about the three English tests to decide which one is better; and then they had to share the results with their classmates via an oral or written report.

On the whole, the Internet-based activities practiced by the learners during the computer lab sessions (whether the treasure hunts or the WebQuest) tended to rely very much on Internet searching skills. It was believed that manipulating this commonplace function of the Internet in this manner would result in the learners' practicing skimming and scanning in a much more motivating and interesting manner than the skimming and scanning often artificially induced by reading instructors. At the same time, the learners would be improving their much-needed research and electronic literacy skills.

In order to establish a comparison between the experimental and comparison groups, both groups were given a sample PET reading test (i.e., Preliminary English Test; see http://www.cambridgeesol.org/exams/pet/index. html) as a reading pretest at the beginning of the term, and a second sample PET reading test as a post-test at the end of the term. In order to minimize the

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ordering effect of the two PET reading tests, a counterbalanced test design was used (Mousavi, 2009), meaning that half of each group took Sample PET Test 1 as a pretest and Sample PET Test 2 as a posttest, while the other half of each group took Sample PET Test 2 as the pretest and Sample PET Test 1 as the posttest. The reliability of Sample PET Test 1 was estimated to be .83 and .72 for the pretest and post-test, and the reliability of the Sample PET Test 2 was estimated to be .75 and .63 for the pretest and post-test, respectively.

Interestingly, the reliability of both sample PET reading tests was higher for the pretest than for the post-test. This may be related to the researcher's observation that the learners seemed to take the pretest very seriously, but the post-test much less so. This, in turn, seemed to be due to the fact that the pretests were administered very shortly after the learners' acceptance in the (notoriously difficult) Iranian university entrance exam, when they were still disposed to take exams very seriously. This tendency was probably enhanced by their obvious desire to make a good first impression, despite their having been told that the PET test results were for research purposes only and would not affect their grades. On the contrary, the post-tests were administered at the very end of the term, when the majority of Iranian university students are focused on the approaching pre-exam holidays! This matter, taken together with the loss of the novelty of the PET test when it was administered a second time as well as the students' conviction that the PET test would not affect their term grades, probably accounts for the reduced amount of enthusiasm and cooperation observed during the post-test, which is likely to have affected the reliability of the test scores.

In order to compare the progress of the two groups after one term of instruction, the gain scores (i.e., the difference between post-test and pretest scores) were obtained for both the experimental and comparison groups. Then

a One-Sample Kolmogorov-Smirnov test was carried out, confirming the normality of distribution (p>0.5); boxplots of the gain scores were also obtained, which further confirmed the normality of distribution of the two sets of scores. Finally, group statistics were obtained for the gain scores of the two groups (Table 1), and an independent samples t-test was performed, the results of which are reported below.

In addition, in order to understand some of the challenges of practicing EFL reading in computer labs (research question 2), teacher observations and learner interviews were utilized for the experimental group. The teacher observations were recorded in the form of brief notes jotted down throughout classes held in the computer lab, at the same time that the learners were working at the computers; these cursory notes were further developed as soon as possible after each class. Furthermore, 3 of the learners of the experimental group were randomly interviewed as to what they had liked/disliked about having reading classes in a computer lab. The response to the second research question is also discussed below.

4. Results and Discussion

As Table 1 below indicates, the experimental and comparison groups showed dissimilar differences between their post-test and pretest scores, with the scales tipping in favor of the comparison group.

Table 1.Group Statistics for The Difference Between Post-Test and Pretest Results (i.e., Gain Scores) on the Sample Pet Reading Tests

	Group	N	Mean	Std. Deviation	Std. Error Mean
Difference between	Experimental group	23	.83	6.228	1.299
Post-test and Pretest	Comparison group	28	3.29	6.949	1.313

In order to ascertain whether the different performance of the two groups was significant or not, an independent samples t-test was carried out on the gain scores of the sample PET reading tests. Thankfully, the Levene's test was not significant (p=.820), indicating that equality of variances may safely be assumed. On the other hand, the results of the t-test were not significant, either: t(49)=-1.317; p=.194, indicating that the apparent differences in the performance of the comparison and experimental groups do *not* reach statistical significance.

It must be noted that although the two groups did not perform very differently on the sample PET reading test after one term of instruction and indeed, the comparison group slightly outperformed the experimental group, my personal conviction is that the experiment was a successful one. True, no statistical difference was found between the two groups; however, the experimental group gained a considerable amount of useful additional information on and experience with basic research skills, as well as a great deal of practice working with computers and the Internet. Many of the learners had little or no experience using the Internet previous to their reading class; therefore, the online reading experiences broadened their perspective and contributed considerably to their electronic literacy, helping to make them comfortable with computers and the Net; teaching them about hyperlinks and reading on the Internet, as well as how to do searches on the Internet, and how to distinguish between reliable and unreliable Net sources. It has been suggested that the nature of online texts is somewhat different from printed texts and therefore involves different processes and different skills (Levy, 1997; Warschauer, 1999); therefore online reading skills deserve to be dealt with separately. This will become more obvious in the future with the increasing

popularity of the Internet, and such concepts as multiliteracies (NLG, 1996), electronic literacies (Warschauer, 1999), etc.

The lab reading experience also served as a strong motivating factor, and made the reading class very enjoyable, to the extent that the researcher often had difficulties trying to make the learners leave the computer lab! The learners frequently expressed their satisfaction with practicing online reading. One of the interviewed learners said, "It's really necessary for us to learn how to read on the Internet, because nowadays a lot of authentic reading is online." Another jubilantly said, "Whenever I had problems using a computer I would ask for help from my older brother, and he used to make fun of me for not knowing these things, but recently I was able to teach him something he didn't know! He was very impressed and asked me how I had learned such things in a language class." The third one said, "I always felt uncomfortable using computers, but now I'm eager to learn more and to try out new things. I'm hooked!" She also mentioned that using computers in class had helped her to discover some very interesting websites that she had found useful for her own personal needs and interests. And throughout the term, many of the other learners expressed hope that their future classes would be held in the computer lab, as well.

Other merits aside, it also seems very likely that most of the learners will continue to read online, which would lead to more extensive reading than they are naturally accustomed to, and which could lead to a natural and relatively painless improvement in their reading in the long run. As Healey (1999, p. 119) points out, "nothing improves reading and reading enjoyment like extensive reading." Although research is required to confirm this, it seems logical to assume that the learners who have become accustomed to online reading will ultimately be spending more time reading English and they will therefore be

doing more extensive reading than those who limit themselves to reading printed materials.

However, the computer-based reading class was not without its difficulties: One of the challenges noted by the researcher/teacher in her classroom observations was the unpredictability of Internet connections in Iran, which led to a last-minute change of plans more than once when the Internet connection was too slow or occasionally disconnected. The first time this happened, the researcher was not sufficiently prepared, and useful time was wasted due to the absence of a back-up plan. Also, it frequently happened that time was wasted on technology issues unrelated to language learning. These ranged from problems with outdated and malfunctioning computer hardware/software; to problems stemming from the learners' computer unfamiliarity or technophobia; to websites that were slow to download, froze or displayed error messages. The researcher attempted to turn such occasions into a learning opportunity for discussing technology in English; however, this naturally led the discussion away from the planned syllabus and required more spontaneity and creativity.

On the other hand, the researcher had to monitor the students to make sure they weren't occasionally tempted to use the computers for purposes other than the classroom activity. (This was made easier through the use of software installed on the lab computers, enabling the researcher to see the students' computer activities on her own desktop). The very novelty and excitement of using computers in class was sometimes too distracting, and more than one student was caught red-handed checking their email or downloading a music clip, etc., when they were supposed to be involved in the class work.

Plagiarism and copy/pasting was also felt to be a problem when the students were preparing their final reports for the WebQuest activity. Most students

seemed to be satisfied with finding what they considered to be adequate answers to their online treasure-hunts and quests, and did not seem to feel the need to rewrite those answers using their own words or to amply acknowledge their sources. Also, not all of the students always understood the relevance of online searching to improving reading skills, which suggests the necessity of occasionally providing more information in this regard to reassure the learners that the tasks are purposeful and useful.

Some problems were also noted by the learners in the interviews: One of the learners mentioned that at the beginning of the term she would sometimes feel a bit stressed when the technology didn't work correctly. Also, she occasionally worried that she did not know as much about computers as some of her friends, and that this would lead her to fall behind or receive a lower grade.

It is worth pointing out that in addition to the problems detected by the researcher and learners of the current study, some scholars have also raised concerns about the hegemony of technology, as well as questions about the values and ideologies conveyed through the "consumer-oriented technological culture" (Bowers, 2000, cited in Chapelle, 2003). In fact, cultural concerns are a widespread and legitimate concern on the Internet. Many people are rightly anxious about the demoralizing effect that an unbridled use of the Internet might have, and worry that using the Internet will ultimately injure the learners' native cultures, as well as their languages (Marandi, 2010). Teachers using the Internet in EFL reading classes need to be aware of CALL hegemonies (Lamy & Pegrum, 2010) and to employ "*critical* CALL." However, as Marandi (2010, p. 185) points out, "It seems reasonable to assume that in helping our learners to discover those uses of the internet which are interesting, useful, and yet safe, we are reducing the chances of their abusing the privilege."

On the other hand, it is important to note that the mere addition of CALL components to an EFL reading class will not ensure success and that, similar to classes without technology, all CALL-oriented classes and activities should be goal-oriented and should be chosen carefully and in accordance with language learning theories. As Healey (1999, p. 136) points out, "Technology alone does not create language learning any more than dropping a learner into the middle of a large library does." As pointed out above, the bells and whistles of technology-enhanced classes can be as distracting as they are interesting, and a lot of time may easily be wasted in such classes if the teacher is not careful. The role of teachers is thus not lessened by the addition of technology; if anything, their responsibilities increase, since "students can only learn from computers with the instruction and supervision of teachers: CALL will not be effective without this essential interaction of teachers and students" (Jones, 2001, p. 36).

5. Suggestions for Further Research

Although the current study was not able to show any differences in the reading abilities of the two groups, it is worthwhile replicating the study, in my opinion, with an achievement test instead of a proficiency test. One term of instruction is perhaps not enough to lead to noticeable changes in their general reading proficiency. On the other hand, it seems as though whether the existence/absence of technology in class is more or less effective is not the only question to be addressed (Egbert, Chao, & Hanson-Smith, 1999), since the very chemistry of Internet-based classes seems to be different from regular classes; and each appears to have their own merits and demerits. For this reason, a qualitative study comparing the different learning processes and the types of interactions taking place in the two classes would appear to be a good complement to the present study.

6. Conclusion

It seems clear that reading English texts on the Internet is a language skill which almost all our learners will need, and for which few of them in Iran receive any kind of explicit instruction. Failing to address this need means failing in a part of our responsibilities and duties. Addressing this need requires rethinking our teaching practices, even if that entails acquiring new skills ourselves, and coming up with new solutions. As Thornburg (n.d., p. 10) puts it, "We must prepare learners for their future, not for our past."

References

Butler-Pascoe, M. E., & Wiburg, K. M. (2003). *Technology and teaching English language learners*. Boston, MA: Pearson Education.

Chapelle, C. A. (2003). *English language learning and technology*. Amsterdam: John Benjamins Pub.

Dakers, J. R. (Ed.). (2006). *Defining technological literacy: Towards an epistemological framework*. NY: Palgrave Macmillan.

Dodge, B. (2007). WebQuest.org. Retrieved August 28, 2012, from http://webquest.org/index.php

Egbert, J., Chao, C., & Hanson-Smith, E. (1999). Computer-enhanced language learning environments: An overview. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (pp.1-13). Alexandria, VA: TESOL.

Egbert, J., & Huff, L. (2007). Classroom practice: Problem-based language learning. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (2nd ed., pp. 32-40). Alexandria, VA: TESOL.

Garry, A. (2001). Project-based learning just became easy: An introduction to WebQuests. *Learning Technology, 3*(3), 6-9. Retrieved August 28, 2012, from http://www.ieeetclt.org/issues/july2001/learn_tech_july2001.pdf

Grabe, W. (2009). *Reading in a second language: Moving from theory to practice*. Cambridge: CUP.

Hanson-Smith, E. (2007). Classroom practice: Tasks for collaborative learning. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (2nd ed., pp. 194-208). Alexandria, VA: TESOL.

Healey, D. (1999). Classroom practice: Communicative skill-building tasks in CALL environments. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (pp. 116-136). Alexandria, VA: TESOL.

Healey, D. (2007). Theory and research: Autonomy and language learning. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (2nd ed., pp. 377-388). Alexandria. VA: TESOL.

Hudson, T. (2007). *Teaching second language reading*. Oxford: OUP.

Johnston, B. (1999). Theory and research: Audience, language use, and language learning. In J. Egbert & E. Hanson-Smith (Eds.), *CALL environments: Research, practice, and critical issues* (pp. 55-64). Alexandria, VA: TESOL.

Jones, J. F. (2001). CALL and the responsibilities of teachers and administrators. *ELT Journal, 55*, 360-367.

Kasper, L. F. (2000). New technologies, new literacies: Focus discipline research and ESL learning communities. *Language Learning & Technology, 4*(2), 105-128. Retrieved August 28, 2012, from http://llt.msu.edu/vol4num2/kasper/default.html

Lamy, M-N., & Pegrum, M. (2010). Call for papers for special issue of LLT [Theme: Hegemonies in CALL]. *Language Learning & Technology, 14*(2), 111-112. Retrieved August 28, 2012, from http://llt.msu.edu/vol14num2/call.pdf

Levy, M. (1997). Reading and writing linear and nonlinear texts: A comparison of technologies. OnCALL, *11*(2), 39-45.

Marandi, S. S. (2002). Teaching English in the new millennium: CALL in Iran. In A. A. Rezaei (Ed.), *Proceedings of the First Conference on Issues in English Language Teaching in Iran* (pp. 205-220). Tehran, Iran: University of Tehran Press.

Marandi, S. S. (2010). Bravely stepping forward: Creating CALL communities to support teachers and learners in Iran. In J. Egbert (Ed.), *CALL in Limited Technology Contexts* (pp. 179-188). Texas: CALICO.

Mousavi, S. A. (2009). *An Encyclopedic Dictionary of Language Testing* (4th ed.). Tehran: Rahnama.

New London Group (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review, 66*(1), 60-92. Retrieved August 28, 2012, from http://wwwstatic.kern.org/filer/blogWrite44ManilaWebsite/paul/articles/ A_Pedagogy_of_Multiliteracies_Designing_Social_Futures.htm

Noodeh Farahani, E., & Maghami, A. (2012). ملاحظات سیاستگذاری آموزش زبان در کشور [National policymaking considerations for foreign language teaching] (Report No. 12361). Tehran: Office of cultural studies of the research center for the Iranian parliament.

Nuttall, C. (1996). *Teaching reading skills in a foreign language* (new ed.). Oxford: Macmillan Heinemann English Language Teaching.

Robb, T. N. (2006). Issue: CALL and the nonautonomous learner: Build it, but will they come?. In E. Hanson-Smith & S. Rilling (Eds.), *Language Learning Through Technology* (pp. 69-76). Alexandria, VA: TESOL.

Shetzer, H., & Warschauer, M. (2000). An electronic literacy approach to network-based language teaching. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 171-185). Cambridge: CUP.

Snyder, I. (Ed.) (2002). *Silicon literacies: Communication, innovation, and education in the electronic age.* London: Routledge.

Thornburg, D. D. (n. d.). Technology in K-12 education: Envisioning a new future. Retrieved August 30, 2012, from http://www.edtech.ku.edu/resources /portfolio/examples/nets/Miller/www.air.org/forum/Thornburg.pdf

Warschauer, M. (1999). *Electronic literacies: Language, culture, and power in online education.* Mahwah, NJ: Lawrence Erlbaum.