How Computer-Based Internet-Hosted Learning Management Systems such as Moodle Can Help Develop L2 Digital Literacy

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Abstract

The emerging importance of Second Language (L2) Digital Literacy within English as a Foreign Language (EFL) in Korea is becoming apparent. This is likely to evolve to where L2 Digital Literacy becomes regarded as the most critical component of overall L2 English Literacy. Computer-based Internet-hosted Learning Management Systems (LMS) are rapidly being adopted worldwide for distance education, and are also being applied to blended (hybrid) education. LMS such as the popular open-source Moodle have a special potential in EFL Education: by setting the LMS to force English to be used exclusively throughout a course website, the meta-language can be made the target L2 language. Students develop the ability to use English to navigate the Internet, access and contribute to online resources, and engage in computer-mediated communication. Through such necessary and pragmatic engagement with English, students significantly develop their L2 Digital Literacy.

Keywords: *Digital literacy, Second Language, SLA, L2, EFL, LMS, Korea, Moodle, Learning Management Systems, Internet navigation, meta-language.*

1. Introduction

Within English as Foreign Language (EFL) pedagogy in Korea, there is growing recognition of the need to develop student ability to use English to navigate the Internet, use online resources, and engage in computer-mediated communication. I subsume these abilities into Second Language (L2) Digital Literacy [1], which I maintain will come to be considered as the most critical component of overall L2 English Literacy.

This growing importance springs from three key interrelated factors. Firstly, the emergence of English as a global language has been well documented [2], as has its predominance on the Internet and in digital media. Secondly, it is now recognized that the predominant use of English worldwide by non-native speakers will likely be in communication with other non-native speakers, rather than with native English speakers [3]; Graddol shows the number of people who speak English as a second language will exceed the number of native speakers [4]. Thirdly, as I have elsewhere drawn attention to [1], the exponential increase in computer-mediated communication through digital convergence means that we are fast approaching a critical threshold, whereby the majority of human communications will no longer be face-to-face, but will have become computer-mediated. These digital communication media include telephony, VOIP, SMS, Email, instant messaging, chat-rooms and online forums, computer gaming, television, video, movies, social networking sites, twittering, etc.

Computer-based Internet-hosted Learning Management Systems (LMS) are rapidly being adopted for educational purposes by tertiary and other institutions. For example, the free open-source Moodle is described (http://www.moodle.org.nz/) as the fastest growing system for providing e-Learning resources online, and in New Zealand, both the University of Canterbury and Massey University have recently selected Moodle as their Learning Management System. In the U.K., a recent survey has shown it to be the system of choice for 56 percent of all further-education institutions [5].

LMS are widely used for distance education, but can also be effectively used for blended or hybrid education, where they offer a complementary role to traditional classroom instruction. LMS in typical First Language (L1) educational environments can greatly enhance administrative functions, educational delivery, testing and grading. But in L2 Education they have a special potential. Of course, they could deliver L2 content and collect students' L2 task submissions, where all of the meta-language such as task instructions and site navigation could simply be in the students' L1 (and thus provide no incidental EFL component). But the languages used throughout the website and needed for site navigation can be controlled. LMS can therefore be set to force English to be used exclusively throughout the site and for student navigation.

Restricting a course website to L2 English will become popular with native English teachers in Korea; it offers a wide learning potential to students, who then engage with their target language not only in the content of tasks, assignments, forums, wikis, quizzes and exams, but also in meta-activities of creating and confirming an online account, enrolling in an online course, exploring a site, accessing multimedia content, contributing content through forum and wiki postings, and engaging in online tasks, quizzes and exams. In these pragmatic meta-activities, the meta-language is the target L2 language; by engaging with it students develop their L2 Digital Literacy, and so on graduation are better prepared to engage with the computer-based global community that, as I have elsewhere observed [6, 7], mainly communicates digitally, and in English.

2. The impetus to implement an Internet-hosted Learning Management System

2.1. The transition from ExamView to Moodle

For five years I had been using FS Creations ExamView to create quizzes, exams, and surveys, and their online hosting service (previously at www.fscreations.com and since discontinued, see http://www.einstruction.com/) to administer these and to store and later retrieve scores. This use was supplementary to mainstream traditional educational content delivery in the classroom. During that time, I began to realize the developing importance of what, following Davis [8], I elsewhere describe as L2 Digital Literacy [1]. I used the Internet in the classroom to present online multimedia resources like YouTube videos, and to demonstrate how to navigate and complete online homework tasks I had set. These tasks encouraged students to develop their ability to use L2 English to navigate online and to engage productively in the online community. Tasks required students to submit emails in English; establish homepages on an English-language Social Networking Site [9]; produce English-language video guides to their campus using the video cameras on their cell phones [1]; and collaborate online using Google Documents in preparing digital guides for students intending to study overseas. I also adapted the ExamView exams to survey students on their use of online resources [10, 11].

But in 2008, serious difficulties arose with the ExamView online hosting service, with unexpected downtimes that coincided with my scheduled online quizzes. I was keeping grade records online on Google Documents, and wanted a better integration with online tasks, quizzes and exams than ExamView (which is not a LMS) provided. Increasing problems with ExamView culminated in the chance discovery that their online hosting service was to be abruptly discontinued. The search for an affordable and effective solution became more pressing. I explored various options, including FormRouter and Acrobat, concluding that an integrated Learning Management System was required. Inspired in part by Sean Smith's EFL Geek 3.0 review [12], I began at the start of 2009 to implement Moodle. This required a steep learning curve before I had sufficient confidence to use it with classes. Its implementation was not without teething problems; but after a period the service settled down and became reliable.

2.2. Moving questions from ExamView to Moodle

There were considerable difficulties in transferring questions (used in quizzes, surveys and exams) from ExamView to Moodle, which were initially overcome by laborious manual recreation. However, I have subsequently exported ExamView questions of the kinds I mainly use from Question Banks and imported them into Moodle, where they then only require minimal reformatting. True/False and Multiple Choice Questions (which have just one correct answer) can be exported from ExamView Test Generator 5.0 for the Mac from Question Banks as ExamView XML files, and then imported into Moodle (on www.ninehub.com) by selecting ExamView File format (rather than Moodle XML). Other question types can be partially imported, then modified. Multiple Response questions in ExamView (which have multiple correct answers), can first be converted within ExamView Test Generator to Multiple Choice questions (which have only one correct answer) by choosing Question: Change Type, which preserves the selection of the first correct answer only, then exported to XML and imported into Moodle as before. Within Moodle, the Multiple Choice question that is created can be set to have Multiple answers allowed, and any correct answer can then be given a non-None Grade (which automatically makes it a correct answer) of equal value (unless weighting is desired), ensuring grades sum to 100%. Matching questions can be exported and imported; sometimes the answers are imported cleanly; other times the answers all revert to "Array", and have to be reentered by manually retyping, or using copy-and-paste. Other ExamView questions may best be recreated anew in Moodle (depending on the type), using similar copy-and-paste of question and answer elements. Other means of export from ExamView and import into Moodle are available. These depend on the platform and version of ExamView from which one is exporting, and are described in the Moodle documentation and help forums.

3. Implementing Moodle

3.1. Task 1: Greeting and introduction

The first experience students are likely to encounter with Moodle is the need to create an account and to enroll for a course; for this I chose Email-based self-registration. I made that activity a task, for which they receive credit. I set the first task to require the student to navigate to the site, create a personal account, enroll for a course using a course key (password) and enter a student ID in the ID number field of their Profile. They were then required to select the appropriate forum, and write and post a 100-word greeting and introduction that other class members could read.

The account creation process selected involves the student navigating to the site, filling in and submitting an initial account creation form, then validating it by responding to a confirmation email to actually activate the account (this proved a little complex for a class of lower grade students). But some of these confirmation emails from the Ninehub server were delayed by several hours. Then they stopped appearing at all, so the students concerned were caught in limbo, a situation complicated by their limited L2 English ability to figure out what was happening and to communicate their dilemma to me. I then intervened, and enrolled students myself, so that they could continue on to complete their first task, and to engage with subsequent tasks, quizzes and exams. While this second enrolment process is quite efficient for the Instructor to perform - as it can be done in class batches - it takes away from the potential pragmatic learning a student engages in by doing it for herself. Email-based self-registration on Moodle provides a good exemplar for L2 students, and encourages them to spontaneously enroll in other English-language sites that interest them.

3.2. Task 2: The Oxford Quick Placement Test

As Second Researcher for a University of New England research project, I had recently computerized the pen-and-paper version of the Oxford Quick Placement Test in ExamView [13]. I transposed this to Moodle, and assigned this as a supervised task to ensure students are less inclined to cheat. Students could view their score, but received a simple all-or-nothing grade for attempting the test. This work is discussed here [14], and the research developed in a companion paper to the present paper [15].

Setting the OQPT as an online task provides a fairly objective measure of English ability. It is simple to administer, quick, and convenient. Computerization removes the laborious necessity of manual grading, produces digital records of the results, and requires students to engage with the meta-language involved in sitting the test. Students develop their L2 digital literacy skills, and learn how to do online tests in English. There are two versions of the test, both of which are divided into two parts; the two versions are designed to be equivalent, and though not designed for such use could be used to evaluate student L2 English ability at the start and end of a course.

A disadvantage of Moodle over ExamView is that while grading in Moodle shows which questions were answered incorrectly, the instructor can only determine which incorrect answers were chosen for one student at a time; this is limiting. Quizzes are useful as surveys, where one is interested in all responses, and rightness or wrongness is irrelevant. In contrast, in ExamView, the actual answers chosen - right or wrong - could be downloaded by class, so surveys could be conducted, and also quiz answers analyzed to determine common mistakes a class were making, which could later be brought to their attention. However, a patch for Moodle would allow a similar facility.

3.3. Task 3: Forum A: Should Korea become bilingual?

Students were required to first post a 200-word individual response to this question:

"Should Korea become a bilingual society, with both Korean and English as official languages?"

The process of doing this was demonstrated in class using an OHP. Prior to posting their comment, students were unable to read other student comments. After initial posting, the other comments became visible. Students could only view and respond to comments in their own class, though this could have been set so that they could view and respond to other class postings, or only view these but not respond. They were then required to post 100-word responses to two previous posts of other students, making at least three posts in all. These comments were graded, the highest grade being taken towards 5% of their total course grade. Online grading of forum posts and posting replies in Moodle is efficient, albeit complicated by unnecessary intermediary dialogue boxes, and a rather idiosyncratic structure for the instructor to navigate.

This forum generated animated discussion. The developing ability of students to navigate these forums, and engage in sustained written discussions in their non-native L2 English, was encouraging, and should furnish scaffolding and transferable L2 digital literacy skills that they can later apply. My educational philosophy is that the intention of EFL is not to entertain students, but to encourage them to develop L2 English skills that will be useful to them in later life, while encouraging their growth as whole individuals who should, with time, realize maturity and wisdom.

3.4. Quizzes

Moodle is well suited to deliver the required quizzes and Midterm and Final exams, though limitations do arise. Over several years I have built up a valuable stock of questions in ExamView format, which are maintained in Question Banks. Using these in Moodle requires significant work to transfer them, as discussed above. Secondly, conducting online quizzes or exams in class requires access to computer labs of adequate numbers of computers, and the online Internet-based hosting requires that all computers used have Internet access, the hosting site being accessed through a web browser. However the use of a LAN might provide a good strategy for obviating cheating through instant messaging or email, though it would also prevent the use of online digital resources such as search engines and online dictionaries, which I wish to encourage. In many universities, such lab facilities may be limited in availability. I am the only native English teacher in my university using computer-based tests; if this number increases significantly it is difficult to see how lab access will continue unimpeded. Thirdly, although I select settings so that the quiz or exam for each student opens in a secure window, determined students are still able to instant message or email one another during the task, despite my warnings not to and active proctoring. This dilemma is complicated by my wish to encourage them to use online English-language resources - such as online dictionaries, grammar sites, and encyclopedias; to encourage this use I make all of my quizzes and exams Open Book, and allow them to access any digital or online resource. So if a student screen shows windows that are not of the task in question, this need not imply that they are cheating. Often these sites are in Korean, though recently more students use the Google search engine in English. Without spy software that monitors all computer usage - or the problematic disabling of access to instant messaging and email sites, while allowing access to other sites - it is very difficult to ensure that students do not cheat. For similar reasons, while I strongly encourage the use of digital resources, it is difficult to determine whether texting on a cell phone during a quiz or exam is innocent - in accessing a built-in dictionary (which I encourage), or not (using SMS to communicate answers). Elsewhere I discuss the intentional use of cell phones and smart phones in the classroom [16]; as smart phone use becomes more prevalent in class, this difficulty will only increase.

The problem of cheating in online quizzes and exams is unresolved. Hopefully, most students are

honorable, and respect the examiner's dictates not to communicate with one another. But some do not, and if not caught in the act (despite complaints by other students), uncertainty as to the reliability of exam results arises. Cultural differences also need to be taken into account. I have observed that in Asian cultures, information is more commonly stored in the collective mind than in the individual, and in later life such cooperative use of knowledge in the workplace is to be anticipated: in the educational environment is it always appropriate to penalize such practices?

3.5. Task 4: Forum B (Level 1A): Australian Aboriginal art, culture, music and dance

A second forum, set as an online task for Fine Art (Painting) students, asked them to select an online video on Aboriginal art, culture, music and dance from links posted on the course webpage. After viewing it, they wrote a response relating it to their ideas about and practice of art. They then posted a reply to another student's response. Their engagement with the task was impressive for beginning level EFL students.

4. Student experiences

It takes time and student goodwill for LCM to be implemented in classes. I had presumed that there was not yet a classroom culture of acceptance of computer-based tasks, quizzes and exams in L2 English, but difficulties dissipated after individuals successfully created an account, enrolled in a course, completed the first task, and completed their first online class quiz. I have yet to gather formal feedback from students; Moodle's evaluation surveys are too demanding for L2 sophomore students. Online class quizzes and exams now go smoothly, and there have been stimulating written contributions and debate on online forums. Students unable to attend class tasks, quizzes or exams (because of broken legs, hospitalization, or absence from Seoul) are able to do the class work at the same time from anywhere with Internet access. I simply SMS or email them the password shortly before their class quiz starts.

4.1. Task 4: Forum B (Level 2A): What part should computers and digital resources such as the Internet play in teaching and learning EFL in Korea?

A second online forum task addressed the part computers and digital resources such as the Internet should play in teaching and learning EFL in Korea. This resulted in insightful responses and interesting debate, and indicates that students are ready to accept LMS such as Moodle in the classroom. Encouragingly, they are open to LMS use in L2 English pedagogy, with some now expecting to use computers and the Internet. And, as I elsewhere explore, L2 textbooks are blending with digital multimedia, Internet resources, e-books, and LMS's [17].

5. Conclusion

The discipline involved in students using L2 English to navigate a course site, perform set tasks, and sit quizzes and exams online, significantly contributes to developing their general skill and confidence in using English online. The type of questions set, such as matching questions, may also require the application of logical skills that should transfer well to general pedagogical development, and to other online use.

Computer-based quizzes and exams have great advantages for rapid and automatic scoring and grading, but require a great deal more work prior to the task in setting up and testing. If Internet-hosted, they are critically dependent upon having a stable and reliable online hosting service. A significant advantage to online quizzes is that if the quiz parameters are set accordingly, the student can find out their score immediately on completion, as the software conducts scoring automatically. With some ingenuity, overall grades can also be know on completion of exams, providing an equation has been entered into the Grading menu, subsequent scaling of the class grades is not required, and other tasks have been completed and graded.

As I address elsewhere [18], there is currently in Korean EFL/ESL - as elsewhere - a need to deploy existing educational resources more effectively. One effective means of developing student L2 Digital Literacy is to use LMS to force English exclusively on EFL/ESL course websites, which makes the meta-language the target L2 language. This means correlates well with a key theme that has emerged to inform my research over the last few years [19], namely the realization that in time, L2 Digital Literacy will likely evolve to become regarded as the most critical component of overall L2 English Literacy.

6. References

[1] R.C. Meurant, L2 Digital Literacy: Korean EFL students use their cell phone videocams to make an L2 English video guide to their college campus. In: 2007 International Conference on Intelligent Pervasive Computing (IPC-07). IEEE Computer Society Press, Los Alamitos, 2007, pp. 169-173.

[2] D. Crystal, English as a global language. Cambridge University Press, Cambridge, 1997.

[3] D. Graddol, The future of English? (Electronic version). britishcouncil.org, British Council English, Online document, 2000, http://www.britishcouncil.org/english/pdf/future.pdf

[4] D. Graddol, English next: Why global English may mean the end of English as a Foreign Language. britishcouncil.org, British Council. Online document, 2006, http://www.britishcouncil.org/learning-research-englishnext.htm

[5] C. Everett, ZDNet UK: Moodle tackles e-learning muddle. Online article, 2007, http://resources.zdnet.co.uk/articles/features/0,1000002000,39285941,00.htm?r=1

[6] R.C. Meurant, The Significance of Second Language Digital Literacy - Why English-language Digital Literacy Skills Should be Fostered in Korea. In: 2009 Fourth International Conference on Computer Sciences and Convergence Information Technology. CPS / IEEE Computer Society, Los Alamitos, 2009, pp. 369-374.

[7] R.C. Meurant, The Korean Need for L2 Digital Literacy in English. In: Proceedings of the 2010 Korea Association of Teachers of English International Conference: Teaching and Learning English as a Global Language: Challenges and Opportunities (KATE 2010), KATE, Seoul, 2010 (in press).

[8] M.A. Lyman-Hager, A. Johns, H. Nocon and J.N. Davis, Literacy in Digital Environments: Connected Communities of Language Learners. In: J.H. Sullivan (Ed.), *Literacy and the Second Language Learner*. Information Age Publishing Inc., Greenwich CT, 2000, pp. 261-280.

[9] R.C. Meurant, Mixed Success on US.Cyworld: Reflections on Korean EFL College Student Efforts to Establish an L2 Presence on an American Social Networking Site. In: 2008 International Conference on Convergence and Hybrid Information Technology (ICHIT-08). IEEE Computer Society, Los Alamitos, 2008, pp. 440-445.

[10] R.C. Meurant, A Preliminary Survey of the Use of Cell Phones, Electronic Dictionaries, SMS, Email, Computers and the Internet by Korean College EFL Students with Respect to Patterns of L1:L2 Language Use and the Associated Language Learning Strategies Used in Accessing Online Resources. In: 2007 International Conference on Multimedia and Ubiquitous Engineering (MUE2007). IEEE Computer Society, Los Alamitos, 2007, pp. 767-772.

[11] R.C. Meurant, Second Survey of Korean College EFL Student Use of Cell Phones, Electronic Dictionaries, SMS, Email, Computers and the Internet to address L1:L2 Language Use Patterns and the Associated Language Learning Strategies Used in Accessing Online Resources. In: 2007 International Conference on Convergence Information Technology (ICCIT-07). IEEE Computer Society, Los Alamitos, 2007, pp. 240-246.

[12] S. Smith, EFL Geek 3.0: Book Review: Moodle 1.9, 2008, http://eflgeek.com/index.php/eflgeek/comments/book-review-moodle-19-e-learning-course-development/

[13] Oxford University Press: English Language Teaching: Quick Placement Test, 2009, http://www.oup.com/elt/catalogue/isbn/40031?cc=br

[14] R.C. Meurant, Computerization and Administration of the Paper-and-Pen Version of the Oxford Quick Placement Test: Experiences of, Problems with, and Recommendations for the Computer-based Web-hosted Assessment of L2 Literacy. In: Proceedings of the International Conference on Multi-media Assisted Language Education: E-language learning and testing in a globalized era (KAMALL-APAMALL 2009). Bookorea, Seoul, 2009, pp. 66-67 (abr.).

[15] R.C. Meurant, Computer-Based Internet-Hosted Assessment of L2 Literacy: Computerizing and Administering of the Oxford Quick Placement Test in ExamView and Moodle. First International Conference on Multimedia, Computer Graphics and Broadcasting (MulGraB 2009). In: Communications in Computer and Information Science CCIS #60: Multimedia, Computer Graphics and Broadcasting, Springer, Heidelberg, 2009, pp 84-91.

[16] R.C. Meurant, Cell phones in the classroom: Thumbs up to SMS. In: G. Lee, D. Slezak, T.-H. Kim, P. Sloot, H.-K. Kim, I.S. Ko, and M. Szczuka (eds.), 2006 International Conference on Hybrid Information Technology (ICHIT2006). IEEE Computer Society, Los Alamitos, California, 2006, pp. 127-134.

[17] R.C. Meurant, EFL/ESL textbook selection in Korea and East Asia - Relevant issues and literature review. In: G.S. Tomar et al. (Eds.), UCMA 2010, CCIS 75, Miyazaki, Japan. Springer-Verlag, Heidelberg, (in press), pp. 89-102.

[18] R.C. Meurant, Mathematical Modeling of the 3:5:4 Initiative - Refocusing tertiary EFL resources in Korea. In: Proceedings of the 4th International Conference on New Trends in Information Science and Service Science (NISS). IEEE Computer Society, Los Alamitos, (in press).

[19] R.C. Meurant, Applied Linguistics and the Convergence of Information Communication Technologies: Collected refereed papers 2006-2009. The Opoutere Press, Auckland, 2010.

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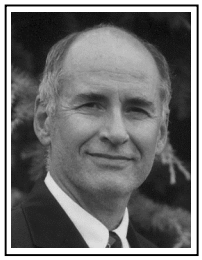

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