

# Technology enhanced scaffolding in Language Teaching: Using LessonLAMS for Korean as a foreign language

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The aim of this work in progress project is to provide a language learning design principle using the Learning Activity Management System (LAMS) as a platform in authentic classroom situations. The research project will use a LessonLAMS sequence and is designed using a 'Dynamic Scaffolding Technique' within the learner's zone of proximal development (ZPD) (Vygotsky & Cole, 1978). The learning design of the LessonLAMS sequence will be incorporated in classroom instruction. The research focus is on technology-enhanced learning tasks, which can be designed and implemented in a foreign language classroom. Participants are South East Queensland secondary students who are learning Korean as a foreign language as an elective subject. Data will be collected from each lesson using qualitative research techniques. Students will complete focus group interviews and questionnaires to highlight their learning experiences as part of the study.

Keywords: LAMS, LessonLAMS, technology enhanced language learning, Korean as a Foreign Language

## Introduction

LAMS (Learning Activity Management System) is newly developed and defined as an online web-based system for creating, managing and delivering sequences of collaborative learning activities (Cameron, 2007). This research postulates that one specific feature of LAMS, the more recently developed LessonLAMS, is able to implement features of effective language learning design using various multimedia technologies and has the potential to enrich language education by creating motivational and communicative lessons that can be utilised to provide diverse resources which are at the disposal of teachers (Bower, 2010; Brenes Castano, Contero Urgal, Rodriguez Gomez, Gomez Ruiz, & Gallego, 2011). LessonLAMS represents an authentic learning activity management system which enables teachers and students to use media appropriate to the specific elements of their language learning (Otto & Pusack, 2009).

The focus of this proposed study is the scaffolding of language learning that LAMS is able to provide through its feedback and help system. In particular, the study engages with learner-driven activities to support students' individual zones of proximal development (ZPD) (Vygotsky & Cole, 1978) in the pursuit of learning Korean as a Foreign Language. ZPD is defined below, but in brief it is a well-known Vygotskian socio-cultural psychological method that involves the learner working with some assistance until they are able to work at that level without assistance. It is logically impossible for a learner to address all aspects of their ZPD, however, the sequenced tasks within LessonLAMS are carefully considered to provide maximum opportunities to approach and extend individual ZPDs (Willis & Willis, 2007). In any given situation, the learner requires ongoing assistance, which can be called technology enhanced dynamic scaffolding. The idea of this is to optimise the students' learning capabilities.

This work in progress research project will investigate how learners complete assigned and carefully sequenced learning activities within their zone of proximal development by using the feedback and help system within LessonLAMS. This study will use curriculum based on the traditional course syllabus and topics in Korean as a foreign language for secondary college students in Queensland, Australia. The experimental learning design is carefully created using LessonLAMS for the target learners in order to gain an insight into the learner-driven practices when they are accessing available scaffolding.

## Significance in Less Commonly Taught Languages

With regard to second and foreign language education, adequate and appropriate learning materials are critical elements for both language teachers and language learners (Richards, 2001). However, particularly in less commonly taught languages (LCTLs), such as Korean, teachers often encounter difficulties with language

materials and teaching methods. For example, due to limited research and the lack of shared practical experience, selecting appropriate methods and corresponding materials is difficult for both less experienced teachers and even for native speakers of the language. While computers and the Internet provide new possibilities to explore teaching methods in LCTLs, tailoring electronic resources such as web-based materials for students is very time-consuming and inefficient, and utilising these resources can make it difficult for teachers to manage the needs of the learner (Hémard & Cushion, 2002). As lessons also need to be planned for the specific learning goal and objectives of the language program, relying only on ready-made language learning materials in LCTLs is often impossible (Donaldson & Haggstrom, 2005).

Moreover, the lack of popularity of various LCTLs means that both traditional learning materials and electronically designed resources are often based on proven activities for English as a second language. However, LCTLs taught in Australia are frequently different from English, using a variety of Asian scripts. Furthermore, a language like Korean language is significantly different from English in such aspects as sentence structure and morphology (word structure). The number of learning materials for LCTLs designed for the target language culture and linguistics structure is very limited (Warschauer, 2005). In addition, even if materials are designed based on targeting LCTLs' culture or linguistic differences, these are usually not suitable for beginning Korean language learners' needs (Debski, 1999). LessonLAMS therefore potentially offers an opportunity to create more suitably adapted materials for beginning learners of Korean as a Foreign Language and other LCTLs.

### **The Notion of the Zone of Proximal Development (ZPD)**

The zone of proximal development (ZPD) is defined as “the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (Vygotsky & Cole, 1978, p. 86). The definition was created with child development in mind, and ZPD has now become a well-known concept of Vygotskian socio-cultural psychology. Later Wertsch (1984) clarified the theoretical construct, including terms such as situation definition, inter-subjective, and semiotic mediation, which will be relevant for this study. Wells (1999), in turn, summarised those characteristics of ZPD expansion that can be applied in any situation in which individuals are developing mastery of a practice, or understanding a topic, while participating in any activity. Kinginger (2002) later developed three different interpretations of ZPD that are related to foreign language education, called ‘skill’, ‘scaffolding’ and ‘meta-linguistic’, which will be explored in more detail with regards to the current research project.

Luckin (2001) emphasises that ZPD is useful for theoretically constructing an educational software design. Accordingly, a learning design is proposed with flexible scaffolding that is either self-maintaining or maintained with students' expected input. This means that LAMS sequences will provide a variety of scaffolding for students depending on their actual answers while they are completing the learning sequence. From a software or system design perspective, such an approach focuses on learners to develop capabilities that they first experience in assisted or collaborative learning situations within their ZPD. This research project will focus on the actual use of feedback and scaffolding support structures within LessonLAMS to illuminate how learners of Korean negotiate their ZPD within the LessonLAMS possibilities.

### **Providing Scaffolding to the Students**

The learning and teaching activities for this study will use the literal interpretation of ‘scaffolding’ which is a temporary framework used to support people or materials in construction. Once the structure is successfully completed, the scaffolding is gradually removed. This term was used in the field of education by Wood et. al. (Wood, Bruner, & Ross, 1976) in considering the initial instructional relationship between an adult (expert) and a child (less expert), in particular in the area of skill acquisition and problem solving. Even though the term ‘scaffolding’ is vague, the metaphor has been expanded and applied to educational research and practice in numerous ways.

Scaffolding has come to represent a number of different strategies or mechanisms of supportive teaching. For example, the computer can act as scaffold through a software program that tutors and guides learning toward specific outcomes (Wood & Wood, 1996). It has been suggested that technology can hasten the beginning of the learning process by enabling more sophisticated levels of performance through instrument assistance. This enables students to schedule, organize and employ cognate mental functions before they can accomplish those

activities independently (Englert, Manalo, & Zhao, 2004). Puntambekar and Hubscher (2005) suggest that technology tool design based on the multiple levels of the students' understanding found in a classroom would enhance and catalyse the process of scaffolding students towards their ZPD. This research is attempting to find out how these concepts apply to the feedback and scaffolding structures in LessonLAMS, in particular in a non-Latin script based sequence of lessons for beginning learners of Korean.

### **Advantages of Learning Design using LAMS**

A learning design is defined as “the application of learning design knowledge when developing a concrete unit of learning, e.g. a course, a lesson, a curriculum, a learning event” (Koper, 2005, p. 3). Under this definition, the term learning design is used to indicate all the elements of learning activities a teacher can design and allocate, e.g. learning tasks, questions, group formation, learning materials to be used by the students (Kordaki, 2011). Furthermore, since technology is involved in classroom instruction in this project, learning design could be alternatively used in a digitalised lesson plan from teacher's perspective (Campbell & Cameron, 2009) as well.

LAMS has been suggested as a tool for creating learning design as an authoring tool, pedagogical design tool, and a motivating tool for learners in a technology enhanced teaching and learning environment. For example, in language teaching and learning, when using or selecting an authoring tool or system, Otto and Pusack (2009) indicate that good technology-enhanced language learning (TELL) authoring tools enable teachers to produce software (materials and tasks) specific to the needs of language teaching and learning, meeting high standards of suitability, interactivity, and used of media for all individual students in a classroom. The user interface of LAMS functions not only for teachers but also for learners as a motivation tool (Katsenos & Papadakis, 2011; Lee & Hwang, 2007). These motivating aspects together with the feedback and scaffolding tools will be at the centre of this investigation into students' self-directed use of LessonLAMS.

### **Methodology**

The aims of this project are to introduce secondary students who are currently learning Korean as a foreign language to LessonLAMS to investigate how this technology tool can enhance their scaffolded learning and ZPD extension.

This research will use a case study approach to allow a detailed examination of a single individual or a single discrete social unit (Ary, Jacobs, & Razavieh, 1990). Yin defines a case study as an investigation of “a contemporary phenomenon within its real life context” (Yin, 2003, p. 13). By using case study methodology to focus “on process rather than outcome, on discovery rather than confirmation” (Burns, 2000, p. 460), this study aimed to gain an in-depth understanding of the use of LessonLAMS to provide a scaffold of students' learning. Case studies allow readers to judge the implications of the study for themselves as it is possible to recognise the complexity and “embeddedness of social truths” (Adelman, Jenkins, & Kemmis, 1983, p. 8) which other forms of research may not necessarily reveal. This methodology was also chosen because case studies “observe effects in real contexts” (Cohen, Manion, & Morrison, 2000, p. 181), with contexts being both unique and dynamic (Cohen et al., 2000).

The overarching research question for this study is:

#### **How can LessonLAMS inform and enhance scaffolding in classroom pedagogy?**

From this question there are several underlying research questions. These are:

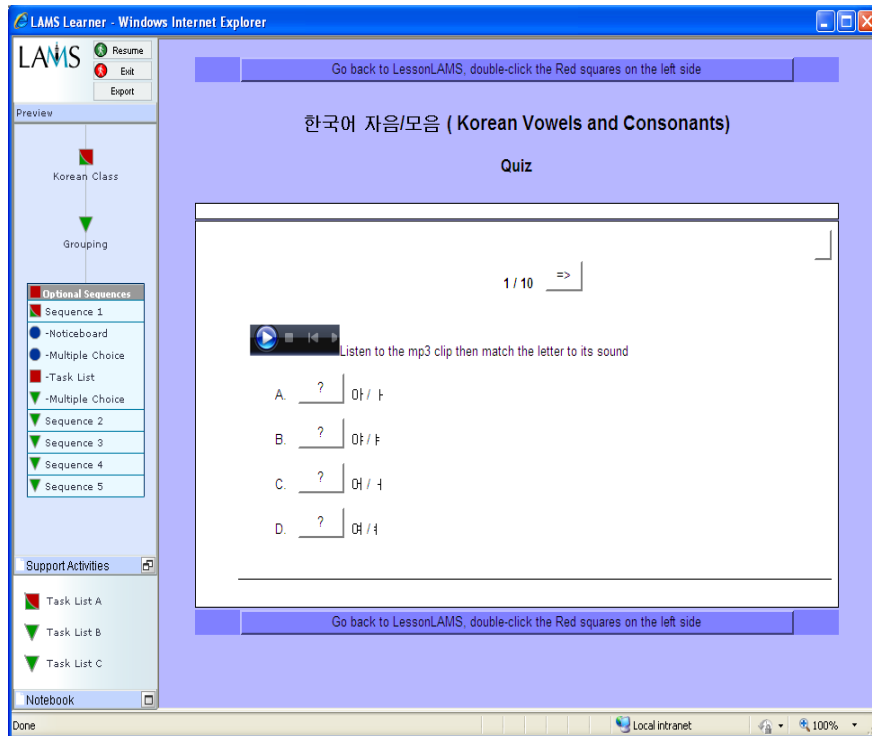
1. What are the self-reported strategies of Korean as a Foreign Language for learners when using the scaffolding options within LessonLAMS?
2. How do these self-reported strategies correspond with collected data from the scaffolding steps within LessonLAMS?
3. How do principles of ZPD correspond with possibilities inherent in the LessonLAMS design?

The participants are secondary students between 12 and 16 years old, randomly selected from students who participate in the Korean program, in the second semester (Terms 3 and 4), of 2011. The sample size is between 20 and 30 and is not gender based. The year level varies as the students are selected from years 8 to 12. It is proposed data will be collected each week during the two school terms, for approximately 20 weeks. At least one LAMS sequence will be completed each week by the students involved in the study with the researcher

asking some open ended questions at the end of each sequence about the scaffolding provided to the students. This data will later be placed with the other data and coded in NVivo for recurring themes.

A pre and post survey will also be conducted as part of this research. It will include both open-ended and closed survey questions and will be used to collect background information initially and students' thoughts and the changes made through the use of the scaffolding. It will comprise multiple choice, multiple answer, short answer, opinion scale and yes/no structures. Questions will cover limited and relevant personal information, participants' language background, and basic computer skills and motivation towards language learning using ICT. It will consist of short statement of purpose and approximately 20 questions.

Data may also be collected from the left hand side of the 'supportive activities' as shown in Figure 1.



**Figure 1: Learner's view of LessonLAMS Sequences**

These supportive activities will be designed, based on theory and using the dynamic scaffolding technique by assigning learning tasks and activities between current level and developmental level of learners' ZPD. The data is focused on which learning activities are mostly accessed by whom, when, and why. In addition, the learner's results from the sequence will be collected. This data can be used to analyse the learning progress. The LessonLAMS sequence will have two levels of assessment in order to provide scaffolding tasks to facilitate the main tasks for effective language learning.

Students will also have the opportunity to participate in focus group interviews with the purpose of eliciting student self-reporting on accessing the scaffolding and feedback tools in LessonLAMS. The focus group members will be selected randomly at the end of each term. The group will consist of approximately five students who completed the LessonLAMS tasks. This group interview will take 30 to 40 minutes at the end of each term with the interview content being recorded.

### Using LessonLAMS with the Students

During the two school terms, lessons will be conducted using LessonLAMS. Each lesson is fifty minutes long and the number of classes per week varies depending on the year level but the LessonLAMS sequence will be undertaken for approximately 20 weeks during school Terms 3 and 4, 2012. The LessonLAMS is designed to last for thirty minutes each week during the term.

The topic and learning objectives are related to the Term 3 and 4 syllabi for each respective year levels. There is no specific classroom book but the cohort uses a variety of materials including a particular web-site and multimedia resources (e.g. mp3 files). The selected lesson plan is shown in Table 1.

**Table 1: Example of the Year 8 Korean Lesson Planer 2010**

<b>Lesson</b>	<b>Content( 50mins)</b>	<b>Homework</b>
1	Issue texts from library Blank Cards for name tags Using texts and CDs	Learning Korean-Handy Hints WB P.2
2	Annyeonghaseyo P. 10-13 Set up Vocabulary page - hello, stand up, sit down, teacher, hi	P. 14-15
3	DVD	
23	Lesson LAMS	
24	Self - Introducing WB P. 51-53 Country Flash cards/ Make with Hangeul pieces	Korean Costume p. 65
25	Where do you live? P. 47-49 Add to Vocab Page City Flash Card P. 50, 52-53	Tigers and Native Korean Dogs P. 48
26	Korean Typing WB p. 46 Begin Assignment- Writing Task	
27	Work on Writing Task	
28	Work on Writing Task	
30	Writing Task Due	

### Data Analysis

As this is qualitative research, the data will be analysed by “examining, categorising, tabulating, [and] testing” (Yin, 2003, p. 109) the data. After all data is transcribed, the student interview data, open ended survey data and other available qualitative data from Lesson LAMS will be placed into a data analysis software program called QSR NVivo. This program will facilitate organising and managing the data and provide a searching tool (Creswell, 2002) for this research. NVivo will also allow the researcher to manage text data that may be unstructured, assisting with the “processes of indexing, searching, and theorising” (Creswell, 2005, p. 237) and with helping the researcher to “examine features and relationships in texts” (Gibbs, 2002, p. 11).

After transcription there will be a preliminary exploration of the data which allowed the researchers to become familiar with them and then create memos containing any ideas that were formulated (Creswell, 2002). The data will then be coded, which is “the process of segmenting and labelling text to form descriptions and broad themes in the data” (Creswell, 2002, p. 266). New ideas emerging from the data will be noted. The data will then be looked at in terms of answering the research questions with themes being developed by looking at the codes that the students most frequently discussed (Creswell, 2005). These themes will be refined during the analysis of the data with the data being linked by “recognising substantive rather than formal relations between things” (Dey, 1998, p. 152).

### Conclusions

As can be seen from the proposed study above, LessonLAMS is a promising tool for both learning designs and research into self-directed second language learning techniques. Through scaffolding and feedback LessonLAMS has the potential to cater for an approximation and extension of ZPD, enabling learners to move forward and move beyond their current Korean language abilities. While careful planning of the learning tasks is required of the classroom teacher, the actual practice of extending knowledge and use of Korean can be achieved by individual students using LessonLAMS independently. This has consequences for other languages less frequently taught in Australian settings, as the independent use of LessonLAMS enables classroom teachers to provide their students with relevant and suitably adapted learning opportunities beyond set textbooks or other developed material for more frequently taught languages. Furthermore, the manipulation of individual ZPD through the use of scaffolding and feedback tools in LessonLAMS is a promising addition to all Australian

classroom settings, and requires more explorations and analyses of applications in a variety of subjects and settings.

## References

- Adelman, C., Jenkins, D., & Kemmis, S. (1983). Rethinking case study: Notes from the second Cambridge conference. In *Case Study: An Overview*. (2nd ed., 1 - 11). Victoria: Deakin University Press.
- Ary, D., Jacobs, L., & Razavieh, A. (1990). *Introduction to Research in Education*. New York: Holt, Rinehart and Winston.
- Bower. (2010). *Developing Pre-Service Teachers' Research Capabilities Using LAMS*. Paper presented at the 5th International LAMS Conference, Sydney.
- Brenes Castano, A., Contero Urgal, C., Rodriguez Gomez, G., Gomez Ruiz, M. A., & Gallego, N., B. (2011). LAMS as an assessment tool for teaching and learning English as a foreign language. *Teaching English with Technology, 11*(1), 204- 215.
- Cameron, L. (2007). *Documenting learning environments and experiences*. Paper presented at the ASCILITE Conference, Singapore 2007.
- Campbell, C., & Cameron, L. (2009). *Using Learning Activity Management (LAMS) with pre-service secondary teachers: An authentic task*. Paper presented at the ASCILITE, Auckland. Retrieved from [www.ascilite.org.au/conferences/auckland09/procs/campbell-c.pdf](http://www.ascilite.org.au/conferences/auckland09/procs/campbell-c.pdf)
- Cohen, L., Manion, L., & Morrison, K. (2000). *Research Methods in Education*. (5th ed.). London: RoutledgeFalmer.
- Creswell, J. W. (2002). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. New Jersey: Pearson Education Inc.
- Creswell, J. W. (2005). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (2nd ed.). New Jersey: Pearson Education, Inc.
- Debski, R. (1999). *Worldcall: Global Perspectives on Computer-assisted Language Learning*. PA: Swets & Zeitlinger.
- Dey, I. (1998). *Qualitative Data Analysis*. London: Routledge.
- Donaldson, R. P., & Haggstrom, M. A. (2005). *Changing Language Education Through CALL*. New York: Routledge.
- Englert, C. S., Manalo, M., & Zhao, Y. (2004). I can do it better on the computer: The effects of technology-enabled scaffolding on young writers' composition. *Journal of Special Education Technology, 19*(1), 5.
- Gibbs, G. R. (2002). *Qualitative Data Analysis: Explorations with NVivo*. Buckingham: Open University Press.
- Hémard, D., & Cushion, S. (2002). Sound authoring on the Web: Meeting the users' needs. *Computer Assisted Language Learning, 15*(3), 281-294.
- Katsenos, J., & Papadakis, S. (2011). *Using LAMS to teach Geography and Biology in K-12 students: A rural Greek high school case study*. Paper presented at the 2011 Asia Pacific LAMS & Learning Design Conference 2011.
- Kinginger, C. (2002). Defining the Zone of Proximal Development in US foreign language education. *Applied Linguistics, 23*(2), 240-261.
- Koper, R. (2005). An Introduction to Learning Design. In R. Koper & C. Tattersall (Eds.), *Learning Design* (pp. 3-20): Springer Berlin Heidelberg.
- Kordaki, M. (2011). The role of context free collaboration design patterns in learning design within LAMS: Lessons learned from an empirical study. *Teaching English with Technology, 11*(1), 188-203
- Lee, J. K., & Hwang, C., Y. (2007). *The effects of computer self-efficacy and learning management system quality on e-Learner's satisfaction*. Paper presented at the 2007 European LAMS Conference.
- Otto, S. E. K., & Pusack, J. P. (2009). Computer-assisted language learning authoring issues. *The Modern Language Journal, 93*, 784-801.
- Puntambekar, S., & Hubscher, R. (2005). Tools for scaffolding students in a complex learning environment: What have we gained and what have we missed? *Educational Psychologist, 40*(1), 1-12.
- Richards, J. C. (2001). *Curriculum development in language teaching*. Cambridge, U.K.: Cambridge University Press.

- Vygotsky, L. S., & Cole, M. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Harvard University Press.
- Warschauer, M. (2005). Sociocultural perspectives in CALL. In J. E. ; & G. M. Petrie (Eds.), *CALL Research Perspectives* (pp. 41-52). New Jersey: Lawrence Erlbaum.
- Wells, G. (1999). *Dialogic Inquiry: Towards a Sociocultural Practice and Theory of Education*. New York: Cambridge University Press.
- Wertsch, J. V. (1984). The zone of proximal development: Some conceptual issues. *New Directions for Child and Adolescent Development*, (23), 7-18.
- Willis, D., & Willis, J. R. (2007). *Doing Task-based Teaching*. Oxford: Oxford University Press.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17(2), 89-100.
- Wood, D., & Wood, H. (1996). Vygotsky, tutoring and learning. *Oxford Review of Education*, 22(1), 5-16.
- Yin, R. K. (2003). *Case Study Research: Design and Methods*. (3rd ed. Vol. 5). London: Sage Publications.

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