

Creating and measuring the effectiveness of a blended learning environment for beginner-level language courses at UBC

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Abstract: This paper discusses the use of technology to implement a blended learning environment in first- and second-year language classes at UBC, Okanagan campus. It draws from an ongoing research project called *Using Mobile Technology to Increase Target Language Interaction in Beginner Language Classes*. The project is a comparative study of the effectiveness of pilot blended courses in three different languages offered at UBC: French, German, and Japanese. In the first stage, beginner-level language classes were delivered using a traditional face-to-face (F2F) approach combining large-group lectures and small-group labs or tutorials; in the next stage, a blended learning environment was created through the addition of online lectures and activities, in an attempt to increase F2F interaction between students and instructors and allow greater time for active language production. As current research on blended learning assessment advocates the use of a holistic focus and a mixed methodology (Blake et al., 2008; Bluic et al., 2007; Burston, 2003; Chenoweth et al., 2008; Rovai, 2004; Sharpe & Benfield, 2005; Sweeney et al., 2004), the project aims to explore possible correlations between, as well as changes in, overall language competence, student satisfaction, community cohesiveness, students' preferred learning styles, and intercultural development. We will address the motivations to create pilot blended language courses at UBC Okanagan and the potential benefits and impacts of such courses on pedagogy, instructor workload, and overall student performance and satisfaction. Technical aspects of producing and distributing online material will be discussed, as well as the challenges created by transferring content from the lecture onto an online platform. Although the project is still ongoing, preliminary comparative results appear positive.

Keywords: Blended learning, French language, Japanese language

1 Introduction

UBC's Okanagan campus has seen its enrolment figures grow exponentially over the last seven years. Since most students enrol in our first- and second-year language classes in order to fulfill the mandatory BA language other than English requirement, this has meant growing enrolment pressures, particularly on the French and Spanish programs. During that time, there has been no significant investment in language program faculty resources to offset the number of incoming students needing to fulfill the language requirement.¹ The result of these pressures has been a gradual increase in class sizes and the consequent inevitable change in the modes of delivery of beginner-level language courses. Each language program has dealt with this change differently. Spanish courses now have about 50 students per section, delivered in three hours of

¹ In French, for example, the number of students in language-requirement courses has increased from 239 in 2005 to 506 in 2013.

lecture with the use of in-class assistants. Beginner-level French classes are run with 75 to 90 students in the lecture portion of the course, which meets for one hour a week; students are then split into smaller tutorials of 30 students each, which meet twice a week for an additional two hours. Because of lower enrolment pressures, Japanese and German courses have generally remained at a lower student count of 35 to 40, which remains much higher than the cap of 24 students at the Vancouver campus, for example. In French courses, the increased number of students has somewhat eroded the ability to engage in meaningful student-instructor interaction, since students cannot always be assured of their instructor's attention and prompt feedback in the large classroom. The same difficulty persists in the lab sections for Japanese and for the tutorial sections in French. Lab and tutorial class sizes, which range from 24 to 35 students, are not an ideal setting to create the kind of close interaction necessary for developing greater oral fluency.

Language programs at the UBC Okanagan campus do not have a standardized model of delivery, but most language courses have been reduced from four contact hours to three,² with the exception of Japanese courses, which have maintained the additional lab hour. In the French program, the loss of the lab hour has meant that courses tend to privilege grammar, reading and writing, and there has been a reduction in time spent for speaking practice in most of our beginner-level courses. Obviously, from a pedagogical perspective, this is not a desirable situation. While commercial products³ could be used to assist in oral practice and supplement the courses, students would, in effect, be asked to pay extra to get more so-called "speaking" practice. This also means that at the most difficult level of language acquisition (speaking whole sentences in a conversation, for instance) students would be left on their own instead of having the instructors with the most experience direct them. We felt that a different solution was necessary. The lack of standardized contact hours in language classes has also created a situation where there are workload inequities, since language faculty in French, German, and Spanish have three contact hours weekly, while Japanese instructors have four.

In this context, we have begun the implementation of a blended learning environment in first- and second-year language classes. This effort is connected to an ongoing research project called *Using Mobile Technology to Increase Target Language Interaction in Beginner Language Classes*, which is being funded by a UBCO Centre for Teaching and Learning's *Innovations in Teaching and Learning* research grant. It is a comparative study of the effectiveness of pilot blended courses in French, Japanese and German.

We have used the term "blended learning" in our project, but often this is called "flipped", "hybrid", or "flexible" learning. In order to clarify, and following several recent published studies, we would like to borrow Horn and Staker's (2011) definition:

Blended learning is any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace (Horn & Staker, 2011, p. 3).

² The reduction of contact hours in language classes is a historical carry-over from Okanagan University College, before it became a part of the UBC system in 2005.

³ For instance, products such as *Tell-me-more*TM, *Rosetta Stone*TM, and Pearson's *My Lab*TM.

Our initial motivation to deploy pilot blended courses came from institutional factors as well as pedagogical considerations. One of our main concerns was the limited amount of time that could be dedicated to improve students' oral skills in our classes. The question for us was how to increase face-to-face student-instructor interaction time, without increasing labour costs for the university, teaching loads for the instructors, or costs for students. In particular, for French, the consideration was to regain the hour of language practice that was lost when labs ceased to be offered. For Japanese, the consideration was one of class size and instructor workload; that is—to be able to reduce the class size for language labs without adding to the instructor's workload. In both cases, the drive was to increase the time for meaningful language practice within the available contact hours.

One solution that appealed to us was the use of technology to create blended versions of our courses. Since grammar explanations do not vary from year to year, they could easily be provided online, and, online platforms are more than adequate to handle self-graded rote practice exercises such as sentence transformation, verb conjugation, and fill in the blanks. We estimated that even a relatively small shift online would free up face-to-face time for instructors, so that they could provide either more interactive activities in the lectures or more sections of tutorials with smaller class sizes. When we turned to recent literature on the subject of blended teaching and learning in language courses, what we found was encouraging.

2 Review of online learning research

In 2010, researchers with the US Department of Education published a meta-analysis and comprehensive review of research studies evaluating online education (Means, 2010). The researchers found 1000 comparative empirical studies published in major academic journals and books over a twelve-year period, of which 51 qualified for statistical analysis. Results revealed that “students in online conditions performed modestly better, on average, than those learning the same material through traditional face-to-face instruction” (Means, 2010, p. xiv). Similar results can be found in a more recent research review. Digital education researchers Kevin Oliver and Dallas Stallings (2014) state that some studies comparing blended online to traditional face-to-face learning show blended models to be equivalent, and others show it to be somewhat improved (Oliver & Stallings, 2014, p. 58). We have not found any research or reviews of research showing blended to be less effective than traditional face-to-face instruction.

Comparisons of fully online to blended online learning provide similar results. The older Department of Education review found that blended instruction increased student learning significantly more than fully online instruction. They caution though, that the apparent differences between blended learning and fully online learning may be attributable to increased learning time or changes in instructional elements rather than the media per se. Oliver and Stallings cite the Department of Education review data, and supplement the older findings with their own observations about more recent publications:

The lack of significance in comparisons of educational technology environments is common, as often the same pedagogy is simply replicated in different formats resulting in the same learning (Oliver & Stallings, 2014, p. 58).

These initial findings gave us the assurance we needed to move forward with our project, since they established that online learning could be, at the very least, as effective as face-to-face learning.

With more specific regard to studies of post-secondary language courses, both our instructional design and our research design have been adapted from a series of studies by Chenoweth, Murday and Uchida on Carnegie-Mellon's Language Online blended learning project. Using the same sample from beginner and intermediate French and Spanish courses (thirteen online sections, twenty-one fully face-to-face sections, eleven instructors, 354 students over five semesters), Chenoweth et al. have published two different studies. One is a quantitative empirical study on student outcomes comparing the blended to the fully face-to-face versions (2006), and the other is a comparative quantitative and qualitative study of student and instructor satisfaction (2008). The student learning outcomes for the blended and face-to-face courses were roughly equivalent (though statistically inconclusive). The satisfaction study showed that students were more satisfied with the blended courses (mainly because of ease of scheduling,) and that both students and instructors were happier with the personal connections they were able to make through the more individualized, smaller, face-to-face meetings via the blended courses. Issues that came up for both instructors and students stemmed primarily from instructional design flaws caused by a lack of experience with online learning and technology that seems quaintly improbable 14 years later. Lessons from this study that remain current include the importance of clearly and realistically framing course requirements, and technological troubleshooting procedures.

We have taken and adapted from these two studies two main approaches: to look at both student outcomes and satisfaction via a combination of quantitative and qualitative instruments for our research; and to put more emphasis on the face-to-face component, while keeping the digital component in our curricular design simple. To this end, we have kept online materials that are easy to follow chronologically (i.e., in Japanese, drills are scheduled to time out to force better time management), and that are low stakes (students get participation points for doing the drills on time). Graded tests and quizzes are live, on paper. We have kept paper textbooks and workbooks. Our grammar lectures are still lectures, since we have chosen linear video rather than multi-directional or self-directional html pages. We have made these videos easily accessible on mobile devices across both Apple and Android platforms. We are still having some technical difficulties with online drills and homework submission, mainly because UBC does not yet support the Blackboard app for mobile devices, and because Blackboard itself has not navigated the jump to mobile technology well, nor in a timely manner.

3 Potential outcomes

The research portion of this project is preliminary—we are attempting to replicate the “does no harm” results of other studies, in order to justify the changes we are making to our course design, while fishing for any correlations (and we are casting the net widely) to frame future research on this management process. At this point in our study, based on the research reviews, we are predicting that for students, the switch to a blended format should:

- Increase flexibility in course scheduling.
- Increase synchronous live spoken interaction in the target language, which should improve oral competence and promote classroom cohesion.
- Increase satisfaction with courses and instructors.
- Make it easier to review for exams.
- Make it easier to keep up when absent.
- Allow students to adjust materials to match previous learning (students do not have to sit through lectures on things they already know), therefore increasing autonomy and responsibility.

For administration, the switch to a blended format should:

- Reduce the use of classroom space (this would require the scheduling process to become somewhat more flexible than it is at the moment).
- Increase FTEs because of fewer scheduling conflicts.
- Increase program quality without adding labour costs.

For instructors, depending on their language and existing conditions, blended formats should:

- Reduce teaching hours for Japanese courses from four to three, making teaching loads equitable.
- Make the face-to-face sessions more interactive since repetitive parts are reduced.
- Increase time for speaking practice without increasing workload or having to find resources to hire TAs or the time to train them.

In terms of our study design and implementation, as most current research on blended learning assessment advocates using both a holistic focus and a mixed methodology,⁴ we used quantitative and qualitative instruments to measure and assess global changes in the following criteria:

- Overall language competence.
- Oral competence.
- Student satisfaction.
- Instructor satisfaction.
- Institutional and administrative satisfaction.
- Community cohesiveness.
- Students' preferred learning styles. □
- Intercultural development.

During the first stage, while we were developing online materials for the pilot courses, we taught our classes live, and gathered data from student participant

⁴ See Blake et al. (2008); Bluic et al. (2007); Burston (2003); Chenoweth et al. (2008); Rovai (2004); Sharpe & Benfield (2005); Sweeney et al. (2004).

volunteers—our control group. During the second stage, we moved all the grammar explanations to an online platform in the form of short video clips; we also added self-grading practice exercises. Again, we recruited student participant volunteers. The course content, tests, and assignments were the same for both versions of the courses. After classes ended participants from test and control groups filled out lifestyle questionnaires, which assessed their study, work, and commuting patterns, as well as the extent to which they used mobile devices to study. After the final exam, participants were asked to complete Rovai's Classroom Community Scale (CCS), Kolb's Learning Style Inventory, and The Intercultural Development Inventory (IDI) online. In order to compare results from the control and test group, we also collected students' grades, and information from the UBC Okanagan Teaching Effectiveness Questionnaire (TEQ). In Japanese 200, students also completed a pre- and post-course oral examination.

4 Existing models

In the current model for French, there is one lecture and two tutorials per week. Lectures are 50 minutes long, and have 75 to 90 students. Class time alternates between grammar explanation, question and answer, small group, and large group practice. The exercises practiced in the lecture portion tend to be of a more mechanical nature, generally. Students also meet for two hours during the week in smaller tutorial sections of 30 students, in which they practice their oral and aural skills, and have the opportunity to engage in guided or open-ended conversations, and in language creation exercises.

In Japanese, there are four scheduled contact hours per week for groups of 35 students. One of the four hours is a scheduled language lab. The language labs are held in a specially designated classroom that has computers and tables for group work, but since there are 35 people in each lab, it often just becomes an extra class for group work, rather than a place to really practice speaking with the instructor. In the larger first-year Japanese courses with multiple sections, attempts were made in the past to increase the number of labs and to decrease the numbers of students in them, but this resulted in either increased teaching loads or in making the lecture parts of classes large and unwieldy.

In German, student numbers have varied from 30 to 80 over the past six years as diverse delivery models were utilized in order to meet demands for increased enrollment or student demand. Most recently, the beginners' language course had 40 students, but no extra hour to divide this group into two smaller lab sections. Seen over time, then, the increased teaching loads or unwieldy and large classes mirrored some of the issues faced by Japanese.

For the pilot blended version of these courses, French added one hour of online work to the course, and Japanese moved two hours of lecture content online. For French 103, the online material consisted of video lectures of two to fifteen minutes each, and of online pre-test (rote) activities. Students had to view the video clips that contained grammar explanations, and complete the pre-test activities before coming to class. In the lecture, the first five minutes or so were used to answer questions pertaining to the online work, and the rest of the lecture time was used for active language practice. In Japanese, the online material for the pilot course consisted of approximately 30 minutes of lecture videos (on grammar points) and 90 minutes of

online practice (including listening and dictation exercises). The students had two hours of scheduled face-to-face time—one was a large-group session for quizzes, tests, grammar questions, textbook pair-work and group pronunciation practice, while the other hour was a small-group language lab session. The instructor, then, was in charge of three face-to-face hours (one whole-group session and two small-group lab sessions). The labs were further divided into four stations so that students, in groups of three or four, would get twelve minutes of intense conversation practice with the instructor, and 36 minutes of flashcards, games, or other group task-based activities to work on independently.

5 Media development

Because the grant received for this project was a research grant, and not a development grant, there was no funding for the production of course materials. As a result, all of the development was done on top of the regular teaching load, on private time with private equipment. As a starting point for producing the French videos, a series of previously developed PowerPoint™ presentations were used. The PowerPoint™ files contained animations inherent to the software as well as frame-by-frame animation. For the final movie file, a voice overlay was recorded separately using Audacity™, then Xilisoft PowerPoint to Video Converter™ was used to combine the sound files with the timed PowerPoint™ presentations, and to turn the presentation files into movie files. The main challenge became the need to make the online lectures work on mobile devices, which meant that the PowerPoint™ files had to be (visually) reformatted so they would work well on a much smaller screen. The change of medium and the loss of live clarification time meant that in most cases, the flow of the grammar explanations also needed to be restructured. The advantage, however, was that each grammatical structure could be explained in much more detail than possible in a timed live-classroom context.

The Japanese lecture videos were made very differently. Old-fashioned hand-drawn frame-by-frame animation was done using photocopy paper, washable markers and a flat-bed scanner. Images were drawn, then scanned into iPhoto™, edited, and then dropped into iMovie™ one frame at a time. Sound was captured into ProTools™ for editing. iTunes™ was then utilized to place the edited sound files into iMovie™. The rendered iMovie™ files were exported as small-sized movies for mobile devices and as large HD videos for computers, and students were given the option to download whichever file size they wanted—from within Connect or from Dropbox™.

For the online environment in the French course, separate folders were created for each chapter of the textbook, where students found a link to the pre-test exercises and to all the video lectures for the lesson. The pre-tests were mainly fill-in-the-blank type exercises. Students were instructed to watch the online video, and then complete the pre-test exercises as preparation for the live lecture, during which the grammatical structures would be practiced. The pre-tests were open for the duration of the course, and students could return to them as many times as they wanted. They were encouraged to continue to improve their scores during the semester (they received a two percent bonus if they achieved an overall score of 90% or more).

For the Japanese blended course, students were expected to do a more extensive series of exercises because a larger portion of the total course hours was allocated online. The chapters and their grammar points were divided into three units. Each unit

was two weeks long, contained two chapters and ended with a chapter test (there were three chapter tests instead of a mid-term). Each chapter had five to six grammar points. Each grammar point had its own three to five minute explanation video and a Blackboard quiz with a number of questions that students could repeat till they got 100 percent, but only until the cut-off point (which was the morning before the live lecture class). The quiz questions started with simple recognition exercises and gradually got more complex. Many question types were utilized—matching, fill in the blanks (for conjugation, spelling, clozes, sentence completion), and jumbled sentence questions. Listening questions with short clips and multiple choice questions were created using the textbook listening files, which publishers permitted us to place on Blackboard. Textbook dialogues and pairwork practice exercises, and any questions students had about the grammar points, were dealt with in the live lecture period, which was how the online segments were connected to the live segments.

6 Initial results

Our present results use data that includes average grades and the course evaluation results from the university for each individual French and Japanese course taught by the authors.⁵

In terms of average grades, the French results are very encouraging. Students in the blended course performed better in all aspects of the course, as well as in the tutorials. These results must be taken in context however; since most students in term 1 (the control group) had not been studying French for four months (during the summer break), while those in the test group had likely completed the previous course, FREN 102, in November. When compared to historical grade averages for FREN 103, however, the blended course still shows the highest grade average for sections taught by the author over the last three years (a four percent increase, overall).⁶ This result is noteworthy as the content of the course has not been changed significantly over that time. The Japanese results are less conclusive, but far from discouraging. When attendance and participation marks are removed, the average overall examination scores are almost perfectly equivalent between the control group and the test group. There were, however, issues with scheduling for the test group and the data collection will be repeated next time the blended course is run.

The course evaluation data is from too small a sample size to be statistically significant, but is still very useful feedback for planning improvements (an action research format). We have summarized the quantitative aspect of the TEQ using the ‘good course’ and the ‘good instructor’ categories. While the reasons for the scores cannot be fully explained at this point, it was interesting to note that students’ perception of the blended courses and of the instructors seemed affected negatively (even though their performance in the course was on par with historical averages).

Students’ written comments in the qualitative section of the TEQs have also been coded to assess the level of satisfaction with the online material. We classified

⁵ We do not have access to grades or course evaluation comments for other instructors’ courses, even for different sections of the same course that run at the same time or share a common final exam. Due to staffing issues, there are no results for German.

⁶ The historical final grades for the face-to-face version of FREN 103 were as follows: 2010 W1, 73.1%; 2011 W1, 68.9%; 2013 W1, 70.2%. For the blended version of the course: 2013 W2, 74.8%.

responses in three categories: positive response, negative response, and no comment. Only comments that were explicitly about the quality and effectiveness of the online material were included.

Of the students who responded to the questionnaire, 50% had no comments related to the online material. Those who commented were overwhelmingly in favour of the content, and only a few, in French, objected specifically to the online lectures. For the French class, the TEQ comments that were the most critical had to do with the live lecture. Four out of 24 students explicitly stated that they did not feel it necessary to go to the lectures since all of the material was provided online. Similar comments occurred in the reviews for the Japanese blended course, where two out of six students said the live lecture hour was, “boring” or “not useful.” This suggests that the pedagogical link between the online study and the live practice in the lecture was not adequately framed for students, and that the live lectures did not use the time that was freed-up creatively enough to engage students. This then recommends, for future iterations of the course, to be more explicit about the pedagogical framework of the blended course. It also suggests that the challenge is to reinvent the live lecture to make it much more interactive and engaging for students.

For the Japanese course, there were two other main issues that became apparent when comparing the control group and the test group TEQ comments. Three out of nine students complained about the other students in the labs in the control group, while four out of six students stated specifically that they enjoyed the interaction in the labs in the test group. This suggests that the smaller groups in the labs, which allowed for better adjustments for ability and personality, worked better socially. Also, in the control group one student commented that they really liked having the grammar explained in Japanese (and then translations given if the students were not following), while for the blended course one student specifically complained that there was not enough Japanese spoken. This indicates that the addition of Japanese voice-overs for the videos—so that students may listen to the grammatical explanations in Japanese as well as in English—may be valuable.

7 Conclusions

The major problem with this project as a research study is its small sample size. Judging by the Department of Education review cited earlier, this problem appears to be endemic to the field. Only 51 out of 1000 peer-reviewed published papers had large enough sample sizes and rigorous enough methodologies to qualify for meta-analysis. While inconclusive, the small set of results we have collected so far does show, however, that we are entirely on track to replicating previous research.

For the future though, it recommends a change of focus. Research already shows that blended learning is a viable model of delivery, and that constructivist, communicative, content- or taskbased, student-centered learning is not new. While ESL teachers have been developing materials and TESOL researchers publishing research on it for a long time, it remains difficult to add labour-intensive individual communicative learning to courses in a university setting because of very rigid administrative parameters. These include: accreditation, transferability, minimum student numbers and increasing FTE targets, traditionally defined teaching loads, long-held customs regarding classroom contact hours, province-wide articulated adoption of grammarbased textbooks, classrooms that are not well designed for language courses,

increasingly limited classroom availability, equipment and resource (budget) limitations, and university-wide mandatory written examinations with compulsory departmental examination percentage weight ranges. And while there is an expectation for pedagogical innovation on the part of the university, administrative systems have not kept up with the growing demand for a more flexible approach to teaching and learning, and can actually work to discourage innovation.

We suspect that, instead of trying to grow our sample size and repeat the same set of comparative research questions, it might be far more interesting (and innovative) to assess management practices in a larger-scale adoption of blended learning across a program, programs, or a department. In other words, our research project is morphing organically from pedagogical innovation to management innovation. Given our position between a proverbial rock and a hard place, we would like to experiment with ways to adjust administrative practices in order to implement best teaching practices already proven by researchers, but in a way that is beneficial to all stakeholders: students, instructors, and administration.

References

- Blake, R., Cetto, M., Pardo-Ballester, C., & Wilson, N. (2008). Measuring oral proficiency in distance, face-to-face and blended classrooms. *Language Learning & Technology*, 12(3), 114–127.
- Bluic, A., Ellis, R., & Goodyear, P. (2007). Research focus and methodological choices in studies into students' experiences of blended learning in higher education. *Internet and Higher Education* 10, 231–244.
- Burston, J. (2003). Proving IT works. *CALICO Journal*, 20(2), 219–226.
- Chenoweth, N., & Murday, K. (2003). Measuring student learning in an online French course. *CALICO Journal*, 20(2), 284–314.
- Chenoweth, N.A., Ushida, E., & Murday, K. (2006). Student learning in hybrid French and Spanish courses: An overview of language online. *CALICO Journal*, 24(1), 115–145.
- Chenoweth, N.A., Ushida, E., & Murday, K. (2008). Learners' and teachers' perspectives on language online. *Computer Assisted Language Learning*, 21(2), 125–142.
- Dziuban, C., & Moskal, P. (2001). Evaluating distributed learning in metropolitan universities. *Metropolitan Universities*, 12(1), 41–49.
- Hammer, M.R. (2009). The Intercultural Development Inventory: An approach for assessing and building intercultural competence (Chapter 16: 203–217). In M.A. Moodian (Ed.), *Contemporary Leadership and Intercultural Competence*. Los Angeles, CA: Sage, 2009.
- Hampel, R., & Hauck, M. (2004). Towards an effective use of audio conferencing in distance language courses. *Language Learning & Technology*, 8(1), 66–82.

- Horn, M.B., & Staker, H. (with Hassel, B., & Ableidinger, J.). (2011). *The Rise of K-12 blended learning*. San Mateo, CA: Clayton Christensen Institute for Disruptive Innovation. Retrieved from <http://www.christenseninstitute.org/wp-content/uploads/2013/04/The-rise-of-K-12blended-learning.pdf>.
- Martyn, M. (2003). The Hybrid Online Model: Good practice. *Educause Quarterly*, 1, 18–23.
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010) *Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies*. Washington, DC: U.S. Department of Education.
- Oliver, K., & Stallings, D. (2014). Preparing teachers for emerging blended learning environments. *Journal of Technology and Teacher Education*, 22(1), 57–81.
- Rovai, A.P., & Jordan, H.M. (2004). Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses. *International Review of Research in Open and Distance Learning*, 5(2), 1–13.
- Sharpe, R., & Benfield, G. (2005). The student experience of e-learning in higher education: A review of the literature. *Brooks eJournal of Learning and Teaching*, 3(1), 1–10.
- Strambi, A., & Bouvet, E. (2003). Flexibility and interaction at a distance: A mixed-mode environment for language learning. *Language Learning & Technology*, 7(3), 81–102.
- Sweeney, J., O'Donoghue, T., & Whitehead, C. (2004). Traditional face-to-face and web-based tutorials: A study of university students' perspectives on the roles of tutorial participants. *Teaching in Higher Education*, 9(3), 311–323.

