

Title: Exploring teachers' use of computer-based activities in ESL/EFL contexts and their impact on L2 learning

Type of grant application: Priority Research Grant

Applicant

Dr. Kim McDonough, Assistant Professor
Division of English as an International Language
University of Illinois at Urbana Champaign

Co-investigator

Wichian Sunitham, Lecturer
English Department, Faculty of Humanities
Chiang Mai University

Detailed proposal

Statement of research issue

The proposed project will explore two research issues that contribute to a more fine-grained understanding of the role of technology in second language (L2) acquisition and pedagogy. The first research issue concerns teacher cognition, which has been defined as “what teachers think, know, and believe and the relationships of these mental constructs to what teachers do in the language teaching classroom” (Borg, 2003, p. 81). This research issue complements TIRF’s priority research theme concerning differences in access to and effective use of technology in English-dominant and non-dominant countries. In particular, the proposed study will investigate the relationship between EFL/ESL teachers’ cognitions about technology and their classroom practices in order to identify the interacting and potentially conflicting factors that influence how they use computer-based technology in their classes. The second research issue concerns the role of computer-based activities in promoting L2 learning, which complements TIRF’s priority research theme about the effects of informed instruction on language learning processes. More specifically, the proposed study will analyze the language-related episodes (Swain, 1998, 2000) that occur when learners carry out computer-based activities and will determine whether the linguistic knowledge targeted during their collaborative dialog is retained.

Theoretical background

The theoretical background for the teacher cognition component of the proposed study concerns the influence of teachers’ knowledge, thoughts and beliefs on their pedagogical practices. Previous research has demonstrated that many factors contribute to teachers’ cognitions about teaching and learning, including their experiences as learners (Holt Reynolds, 1992) and their participation in professional preparation programs (Kettle & Sellars, 1996). Furthermore, teachers’ cognitions interact with the realities of their instructional contexts in ways that influence their classroom practices (Borg, 1997). Considerable research has explored teachers’ cognitions about grammar instruction, reading instruction, and general cognitive processes, such as planning and decision-

making, predominantly in ESL contexts (Borg, 2003). However, little empirical research to date has investigated teachers' cognitions about technology (with the notable exception of Lam, 2000), particularly in EFL contexts. These gaps in the literature remain despite the increasing use of technology in both ESL and EFL contexts (Taylor, Jamieson, & Eignor, 2000; Warschauer, 2000). The proposed study will address the need for a more in-depth understanding of EFL and ESL teachers' cognitions about technology and the process by which those cognitions become realized through classroom practice in their respective contexts.

The theoretical background for the collaborative dialogue component of the proposed study concerns the role of output in L2 acquisition. The output hypothesis of L2 acquisition (Swain, 1995) states that producing language may facilitate acquisition by creating opportunities for learners to notice interlanguage and target language forms, test hypotheses about the target language, and reflect on language use. More recently, Swain (1998, 2000) has argued that producing language through collaborative dialogue promotes L2 learning by fostering the co-construction of knowledge that occurs when learners use language to reflect on language. In sum, the output hypothesis states that language production, particularly through collaborative dialogue, facilitates L2 learning by promoting awareness of and reflection on language form in the context of meaningful communication.

Empirical research within this framework has focused primarily on the collaborative dialogue that occurs when learners carry out traditional classroom activities, such as picture description, information exchange and dictogloss tasks (Adams, 2004; Leeser, 2004; Storch, 1998; Swain, 1998, 2000; Swain & Lapkin, 1998; Williams, 1999). However, collaborative dialogue also occurs when learners work in pairs or small groups on computer-based activities such as finding and evaluating information on the internet, preparing visual aids for oral presentations, reading texts with hyper-gloss annotations, and drafting and revising written assignments. Research in computer-mediated communication has examined the text-based interaction that occurs during synchronous chatting, but has not explored the face-to-face interaction that arises when learners collaborate on computer-based activities. Furthermore, the goal of many computer-mediated communication studies has been to quantify and/or categorize the specific interactional or linguistic features of the discourse rather than to obtain a more holistic understanding of learners' collaborative dialog and its role in L2 learning (Kern, Ware & Warschauer, 2004). Thus, the proposed study will identify how learners orient to language form through collaborative dialog while carrying out the various computer-based activities that are used by the ESL/EFL teachers. By identifying the learning outcomes associated with specific computer-based activities, the researchers can help L2 teachers recognize the pedagogical applications of computer technologies so that they can successfully integrate them into their curricula, as advocated by many researchers (such as Chapelle, 1998; Mills, 2000; Salaberry, 2001).

Research methodology

The proposed project will employ a mixed methods design (Caracelli & Greene, 1997) based primarily on a qualitative case study carried out in each context. For the teacher

cognition study, an ESL/EFL teacher (one per context) will meet the researchers weekly throughout the semester to discuss their previous experiences with technology, their involvement in professional preparation and development programs, their beliefs about language learning and teaching, their access to technology, and their decisions to use (or not use) computer-based activities in their lessons. They will watch video recordings of their teaching and have opportunities to reflect on the implementation of both computer-based and traditional activities. They will also keep a professional journal in which they record any general thoughts about their classes and more specific comments about their use of computer-based activities. Administrators in each context will be interviewed in order to obtain insight into the institutional context in which the teachers work and to identify the institutional factors that may influence the teachers' use of technology. The researchers will use a data-driven approach that triangulates data from the weekly meetings, the video-reflection sessions, the teachers' professional journals, and the interviews with administrators to obtain insight into the teachers' cognitions about technology, and identify factors that influence their use of computer-based activities. These findings will then be incorporated into a questionnaire about the use of technology which will be administered to EFL/ESL teachers in the same departments in order to contextualize each case within its broader sociopolitical and institutional framework.

For the collaborative dialog study, the learners enrolled in the classes taught by the participating EFL/ESL teachers will be audio-recorded when they carry out computer-based activities during class. Immediately after each class, the researchers and/or their assistants will listen to the recordings in order to identify the language-related episodes (LREs) (Swain & Lapkin, 1995, 1998) that occurred in each dyad or group, and will create tailor-made post-tests that target those LREs. The learners will complete the post-tests in the following class period to determine whether they retained the linguistic knowledge that was targeted in the LREs, and again at the end of the semester to investigate possible longer-term effects on learning. The analysis of the collaborative dialog and post-test performance will be supplemented by questionnaire and focus group discussions that elicit the learners' perceptions about the benefits of peer collaboration and computer-technology for learning English, and by the teachers' professional journals and interviews.

Implications

The proposed project will have implications for theory, policy and practice. In terms of theoretical implications, the teacher cognition findings will contribute to a greater understanding of the factors that influence teachers' use of computer-based technology in English -dominant and non-dominant contexts. The collaborative dialog findings will contribute to on-going efforts to understand the relationship between learner-learner interaction and the acquisition of linguistic form. In terms of policy implications, the findings will be used in the EFL context to support departmental initiatives aimed at increasing access to computer resources as a regular component of English language instruction. At the current time, language departments at Chiang Mai University (CMU) have extremely limited access to existing computer resources (such as technology-enhanced classrooms and computer labs) because these facilities are designated for use by science and technology departments. In terms of practical implications, the findings will provide teachers in both contexts with classroom-based research that can help them

answer questions about when, how and why to use computer-based activities in their L2 teaching.