

Situated Learning for Foreign Language Teachers in One-to-One Computing Initiatives

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Abstract

This study focuses on how Spanish teachers in four different rural US high schools use computer-assisted language learning (CALL) in their classrooms, and the nature of the relationship between their use of CALL and their experience of learning about CALL. A situated learning framework was used to evaluate the teachers' learning opportunities in light of their CALL implementation. Teacher interviews, classroom observations, and class documents and websites suggested that the teachers rarely altered their pedagogy or their curriculum to integrate technology. Crucial elements of a situated learning environment were missing, and they corresponded to areas where teachers' usage was not consistent with CALL principles. The study concludes with implications for practitioners, researchers, and theorists.

KEYWORDS: SECONDARY EDUCATION; TEACHER EDUCATION; 1:1 INITIATIVES; SITUATED LEARNING; MIXED METHODS

In recent decades, educational technology has become an increasingly prominent component of K-12 educational contexts in the United States. One important initiative implemented in many districts has served to accelerate this process: the establishment of one-to-one (1:1) programs where every student has a school-issued computing device. State-level 1:1 initiatives are being implemented across the country (Argueta, Huff, Tingen, & Corn, 2011). Research in 1:1 initiatives has shown that they have the potential to increase student

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engagement, technology skills, self-directed learning, and creativity (Lowther, Inan, Ross, & Strahl, 2012). Additionally, they have shown positive effects on teaching, including an increase in research-based teaching practices (Lowther et al., 2012). Research on 1:1 initiatives in foreign language (FL) classrooms has shown that implementation of such programs is significantly different from other disciplines (Inserra & Short, 2012). A recent review of CALL research in K–12 contexts by Ware and Hellmich (2014) did not mention 1:1 initiatives, although the review did identify several learning opportunities (e.g., interactive writing, multimodal tools) that are commonly facilitated by 1:1 initiatives. This area of research is still relatively small, and this study aims to fill that gap, with a particular emphasis on how in-service FL teachers learn about and implement computer-assisted language learning (CALL) in 1:1 classrooms.

To date, research on how in-service FL teachers learn about CALL has generally focused on coursework, workshops, or projects for in-service teachers as a point of departure (Kessler, 2010). Yet, when examined as a whole, the training of teachers in using these technologies has been shown to be inconsistent and highly variable across contexts (Hong, 2010; Hubbard, 2008; Hubbard & Levy, 2006). That is, coursework and workshops are often not how in-service, experienced teachers learn about CALL; some studies have shown that they have largely learned informally and through participatory investigation (Hubbard & Levy, 2006; Kárpáti, 2009; Wesely, 2013).

The current study focuses on how four in-service teachers use CALL in rural US high school Spanish classrooms with 1:1 initiatives and the nature of the relationship between their use of CALL and how they experienced learning about CALL. This study examines the actual and reported practices of these in-service teachers, investigating their struggles and obstacles as well as their successes and innovations (Borg, 2006) thus expanding the limited research currently available on CALL in K–12 contexts and the implementation of 1:1 programs in FL classrooms. It also responds to the call by scholars for more understanding of experienced teacher perspectives on CALL implementation in the classroom and actual classroom practices for integrating educational technologies (Chinnery, 2008; Greenhow, Robelia, & Hughes, 2009). The notion of situated learning, where learners have the chance to engage with real-life, problem-solving contexts (Lave & Wenger, 1991), is used as a framework for the evaluation of these teachers' learning opportunities.

Background

In-Service Teachers, CALL Training, and Changing Technologies

CALL scholars have consistently argued that teachers who correctly use CALL pedagogy can be characterized as being capable of successfully managing the interaction between tools, context, and content. Therefore, all forms of CALL

training, including initial education as well as professional development, is recommended to focus on skills development above and beyond the mastery of specific technologies (Chapelle, 2001; Dooly & Sadler, 2013; Kessler, 2010). Teacher practice must be informed by their training in both how to use the technological tool, and how to incorporate it with their pedagogical practices (Blin & Munro, 2008; Bustamante & Moeller, 2013; Chapelle, 2001; Cutrim Schmid & Whyte, 2012; Levy & Kennedy, 2010; Loveless, 2011; Williams, Abraham, & Bostelmann, 2014).

The research shows, however, that teachers often struggle with this distinction. Rather than focusing on pedagogical development in increasingly technology-rich teaching environments, teachers have been shown to address new technologies as individual elements to be integrated or ignored on a case-by-case basis (Maftoon & Shahini, 2012). For instance, some studies have revealed that when teachers identify a difference between their own approaches to language instruction and what the technologies provide, they often experience frustration or anxiety (Cutrim Schmid, 2011; Kessler, 2010; Wong & Benson, 2006). In-service teachers, when provided with a new technology in their classrooms, have been shown to simply continue their previous pedagogical and instructional habits (Cutrim Schmid & Whyte, 2012), or alternately, to design technology-based activities without paying sufficient attention to pedagogical appropriateness, to the detriment of students (Cutrim Schmid, 2011; Dooly, 2009). Recent studies have also demonstrated that teachers are aware of the problems presented by this practice (Williams, Abraham, & Bostelmann, 2014).

Fortunately, research has suggested that properly scaffolded CALL training can help to improve teachers' attitudes towards the new tools as well as their skills in crafting appropriate CALL activities for their students. Cutrim Schmid (2011) provided an example of this, situated in an English as a Foreign Language (EFL) program for German secondary and vocational students where teachers were provided with interactive whiteboards. In the course of their training, in-service teachers examined their own video-recorded practice and were often surprised by what they saw. This opportunity to reflect on practice for one teacher, the researcher reported, "caused [her] to rethink her pedagogical approach to [technology] use and to generate ideas that could lead to transformative changes in her practice" (Cutrim Schmid, 2011, p. 265).

When CALL coursework has been disconnected from the in-service teachers' teaching contexts, research has shown that the learning process faces a disruption (Dooly, 2009; Egbert, Paulus, & Nakamichi, 2002; Maftoon & Shahini, 2012; Wong & Benson, 2006). For instance, in-service teachers have been shown to alter the task design or sequencing featured in the training (O'Dowd & Ware, 2009), or even alter a technological tool's primary use (Kárpáti, 2009)

when the training did not conform to their teaching context. Similarly, several studies found that when initial CALL training did not address some of the reduced resource issues faced by in-service teachers (e.g., only three computers for an entire class), the teachers actively sought learning opportunities that reflected their actual context (Ebsworth, Kim, & Klein, 2010; Egbert, Paulus, & Nakamichi, 2002; Williams, Abraham, & Bostelmann, 2014).

One final complicating factor for in-service teachers learning about CALL is the fact that US K–12 schools have had limited opportunities for quality professional development for teachers (Ware & Hellmich, 2014). Research has shown that some teachers have turned to online communities in response to this limitation. Teachers participating in online communities have been shown to actively and explicitly relate to their own contexts what they learn about CALL, and the process of collaboration encouraged in these communities has been shown to be beneficial to learning (Dooly & Sadler, 2013; Wesely, 2013). However, researchers have expressed doubts about the sustainability and effectiveness of completely self-directed learning, recognizing its potential and importance to teachers but concluding that formal support is still needed (Hubbard, 2008; Kessler, 2006; Klette & Carlsten, 2012; Wesely, 2013). The empirical research base on how in-service teachers learn about CALL outside of formal coursework is lamentably small; this is one gap that the current study seeks to fill.

Situated Learning and CALL

In order to understand and analyze how the in-service teachers learned about CALL training in the current study, the notion of *situated learning* will be used as a guiding framework. Situated learning opportunities give learners the chance to engage with real-life, problem-solving contexts (Herrington & Oliver, 2000; Lave & Wenger, 1991). In a situated learning environment, learning is based on activity in and with the world, involving the whole person and moving beyond the reception of factual knowledge (Lave & Wenger, 1991). This notion has been used widely in research on CALL training, particularly in studies that examine the processes of teacher learning (Dooly & Sadler, 2013; Egbert, 2006; Egbert, Paulus & Nakamichi, 2002; Herrington & Oliver, 2000; Hong, 2010; Hubbard, 2008; Lave & Wenger, 1991; McNeil, 2013; Wong & Benson, 2006). Because situated learning is focused on authentic application of knowledge, it works well as an analytical framework for teacher education with a field component, that is, either student teachers or in-service teachers. It has also been suggested as an appropriate and valuable model to help increase teachers' technology use in their classrooms (McNeil, 2013).

Herrington and Oliver (2000) established six questions designed to define and evaluate learning opportunities as situated learning, based on Lave and Wenger (1991; Egbert, 2006):

1. *Does [the learning opportunity] provide authentic context that reflects the way the knowledge will be used in real life?* Authentic contexts involve authentic audiences, multiple resources, complexity, and a possibility of collaboration.
2. *Does it provide authentic activities?* Authentic activities have real-world relevance, are often ill-defined (as might happen in the real world), and can be complex.
3. *Does it provide access to expert performances and the modeling of processes?* Experts can include knowledgeable peers, instructors, or specialists; they model processes by sharing their thinking as they plan.
4. *Does it provide multiple roles and perspectives?* Multiple roles and perspectives focus on being exposed to different ideas and approaching a topic from various points of view.
5. *Does it promote collaboration, reflection, and articulation and provide coaching and scaffolding?* Situated learning opportunities must involve other learners as collaborators, coaches, or helpers, while allowing individuals to express their thoughts about their own practice.
6. *Does it provide authentic assessment within the tasks?* Authentic assessment allows for revision, is integrated with the task, includes multiple criteria, and has valid scoring.

These questions will guide the analysis of the CALL training as situated learning opportunities in the current study.

The Current Study

The two primary research questions for this study are:

1. How do four in-service Spanish teachers in rural US high schools use CALL during instruction in their 1:1 classrooms?
2. What is the relationship between their instructional use of CALL and their process of learning about using CALL?

Method

This mixed methods multiple case study (Creswell & Plano Clark, 2011) was conducted over the course of one academic year. Through qualitative and quantitative approaches, the researchers used data sources to provide clarification and insight where one data source did not suffice.

Context and Participants

The participants in this study were from four high schools in different areas of one Midwest state in the United States. Each school featured a 1:1 initiative

ranging from the first to the fifth year of implementation (Table 1). The participating teachers were identified using a small set of criteria established by the first author (Wesely) through purposeful sampling. These criteria included: the teacher was in a 1:1 school, they taught Spanish in a traditional (i.e., non-immersion) high school context, and their district/school was willing to allow access to their classrooms and their students.

Table 1
Participant Data (as of 2012–2013 Academic Year)

Teacher ^a	Years Teaching	Years of 1:1 (Device)	School Type	District Student Enrollment ^b	Notes
Karen	20	5 (laptop)	Rural public	700	Spanish teacher is only one in the school and district.
Jennifer	4	5 (laptop)	Rural public	550	Paperless classroom. Spanish teacher is the only one in the school.
Sharon	11	4 (laptop)	Rural public	650	Spanish teacher is the only one in the school.
James	5	1 (iPad)	Rural private	250	Spanish teacher has one colleague in the school who teaches the lower-level classes.

^a All teacher names are pseudonyms. ^b Information about 3 public schools came from public records on the State Department of Education website; the private school information came from the school website.

Data Sources

Three primary data sources were examined in this study: teacher interviews, classroom observations, and class documents. These data sources reflect this study's stance that how teachers describe their learning is important, and that their descriptions are closely aligned with what they remember, understand, and can put into practice in the classroom (Greenhow, Robelia, & Hughes, 2009). As such, no data were collected during or about the teachers' actual training sessions or formal education in CALL. Information about their training stemmed solely from their descriptions of their learning or experience.

Teacher Interviews

One semi-structured 45-minute videoconference or telephone interview per participant was conducted at the beginning of data collection. It focused on each teacher's teaching philosophy, their opinions, thoughts, and beliefs about technology, their thoughts on their own technology and teaching skills, and their impressions of their professional development and support. After recording and transcription, the interview was reviewed multiple times by two different coders, who assigned descriptive and interpretive codes. Using the research questions as a guide, the two coders noted patterns of similarities and differences among the interviews. The two coders then compared their codes to look for any discrepancies in the patterns, coming to agreement on the final themes that would guide the qualitative reporting.

Classroom Observations

The researchers conducted two full non-sequential days of observation for each participant, which averaged 8.85 hours of active class observation per site. The teachers knew in advance when the researchers would be observing due to the nature of the research agreement with the school districts. As Borg (2006) has suggested, it is impossible for a researcher to collect truly naturally occurring data in the classroom, and researchers must be aware of any evidence that shows that the teachers are acting uncharacteristically during the visit. No such evidence was observed. Wesely (first author) conducted all observations, and Plummer (second author) conducted a subset of the observations when it was possible to have two researchers in the classroom and schedules permitted. The researchers focused on behaviors that were observable and that had clear relevance to the topic of the use of CALL in a 1:1 classroom. For instance, observations about oral corrective feedback were not recorded.

The researchers used an observation instrument that was composed of a combination of validated instruments used in the field, notably the Communicative Orientation of Language Teaching (COLT) Observation Scheme (Spada & Fröhlich, 1995) and the validated evaluative framework for CALL developed by Leakey (2011). Each classroom activity, identified qualitatively, was noted with start and finish time, a description of the activity, and corresponding marks on the characteristics of the activity. For the current study, the category of *Participant Organization* (at the class, group, or individual level) is particularly relevant. Additionally, the researchers marked which of the three modes of communication from the World-Readiness Standards (interpretive, presentational, and interpersonal; National Standards in Foreign Language Education Project, 2015) was emphasized in each activity. The researchers

also recorded if the activity drew learners' attention either to the *form* or the *meaning* of the language. *Control* of the technology was also noted, and *learner* was marked if it was largely self-directed, self-paced learning, while *teacher* was marked if the teacher was controlling the difficulty, pace, and learning path (Leakey, 2011). Additionally, for every activity that used technology, the researchers also marked if the content, task, and linguistic level matched the students (*fit*) and if it integrated well with the rest of the curriculum (*curriculum connection*). These last two categories were not exclusive. Further validation procedures for this instrument were not undertaken. On a separate document, the researchers also wrote narrative notes to clarify activities, note important characteristics of the class that were not measured on the observation instrument, and collect direct quotes from the teacher or consenting students.

Data analysis focused on activity characteristics and correlations among different activity types. Two hundred sixty (260) activities were documented on the observation instrument. If two researchers observed a given class, the data recorded on their instruments were averaged; interrater reliability was calculated using Cohen's Kappa at 0.74 ($p < .01$) (Pearson's R calculated to be .76, $p < .01$). Descriptive statistics were calculated for the data. For the correlational analysis, the raw data for each activity were standardized by converting them into a percentage of the total classroom time. The data were then grouped based on similar features into two groupings: participant organization and mode of communication. Bivariate analysis was then completed and corresponding Pearson correlation coefficients between these groupings and CALL use (CALL activities and non-CALL activities) for all of the observed activities were calculated. Field notes from the observations were organized chiefly according to the quantitative data to provide additional information.

Documents

The researchers had access to each teacher's online course management system (CMS) and the documents posted to them during the observations. The researchers used computing devices during the observed classes in order to follow along online when needed. The researchers returned to these course documents during the qualitative analysis of the observational data, as well as during the analysis of the interviews. School websites were consulted to verify information about the procedures and policies of the schools before, during, and after data collection.

Findings and Discussion

How do Four In-Service Spanish Teachers in Rural US High Schools Use CALL During Instruction in their 1:1 Classrooms?

Quantitative Results on Instructional Activities

CALL activities (activities using technology where the focus was on language learning [Ducate & Arnold, 2011]) constituted more than half (55%) of the activities presented during the observed classes. Of these CALL activities (Table 2), half focused on the presentational communication mode, and only a negligible percentage (6%) focused on interpersonal communication. Relatedly, 44% of the CALL activities were organized on the class level, of which nearly all were teacher directed (i.e., interactive whiteboard activities or presentations); 12% were group activities, and 44% were purely individual activities (e.g., students working alone and reading or writing on their computers). The pace, difficulty, and learning path during the observed CALL activities were controlled half of the time by the students, and the other half by the teachers (Leakey, 2011).

Table 2
Descriptive Statistics of CALL Activities

Category	Characteristic	Percentage of CALL Activities (N = 144)
Participant Organization	Class	44
	Group	12
	Individual	44
Communication Mode	Interpersonal	6
	Interpretive	35
	Presentational	43
	No Spanish used	16
Technology Focus	Form	62
	Meaning	28
	Neither Form nor Meaning	10
Technology Characteristics (Selected)*	Fit	91
	Authentic	23
	Connected to the Curriculum	85
	Collaborative	15

*All characteristics in this list were marked when present; some characteristics may thus have been present in more than one activity.

The descriptive statistics also revealed that CALL activities tended to focus more on form (62%), or the mechanics of the language with modified

interaction, than on meaning (28%), or a focus on understanding the language in as authentic a context as possible. The CALL activities were observed as matching well with the curriculum (85%), with a focus on grammar-based curricula, where mastery of language structures and vocabulary were the primary objectives. Furthermore, the CALL activities were observed to have a good fit with the students' abilities in the language and with technology (91%). These two statistics suggest that the teachers had selected CALL tools and activities that directly supported their curricular and pedagogical goals.

When examined in more detail (Table 3), a strong correlation between technology use and individual activities was found, indicating that CALL activities often entailed students working alone at their computer or tablet. Additionally, there was a significant correlation between CALL activities and activities featuring the interpretive and presentational communication modes. Interpersonal activities significantly correlated with time in class when technology was not being used, suggesting that students rarely communicated with one another while using technology. Interestingly, there was a small but significant correlation between class-level activities and CALL activities. Upon further exploration of this correlation, it was found that the class-level CALL activities were all very similar in format: individual students presenting material to the whole class on a topic they had researched and developed individually using PowerPoint.

Table 3
Pearson Correlations of Observed Activities

		CALL Activities	Non CALL Activities
Participant Organization	Class	.230**	.256**
	Group	.140*	.316**
	Individual	.706**	-.189*
Communication Mode	Interpersonal	-.055	.660**
	Interpretive	.345**	-.015
	Presentational	.657**	-.140*

* $p < .05$. ** $p < .01$

Qualitative Data on Instructional Activities

Similar patterns emerge in the qualitative data. During observations, mirroring the statistical finding of a correlation between CALL activities and individual activities ($r = .657, p < .01$), the researchers witnessed a pattern of students being directed to their computers for a work period on a project, an activity, or time for examining or exploring authentic materials. In their interviews, all

four teachers expressed that they felt it important to allow students to complete independent projects in the classroom to investigate personal interests. Jennifer explained one part of the use of her online textbook, stating: “There are some activities the kids can actually do online and can send you a report on how they did it.” This shift was from paper to a word-processing program, or from a paper textbook to an online textbook, but the structure and content of the learning activities was the same. As such, the individual CALL activities observed in the classroom represented a shift of the media, but not necessarily the method, to use Chapelle’s (2001) terms.

Although there was no significant correlation between interpersonal and CALL activities ($r = -.055$), the qualitative observation data revealed that the 1:1 computing devices were sometimes used in interactive classroom activities focused on negotiating meaning. Karen described her practice of “sending kids on Twitter,” and “going out and looking for some of those authentic experiences for them to have.” Sharon used TodayMeet in one of the observed classes, which allowed her students to respond simultaneously to a written question in an open chat room that was then projected on a screen to share and discuss. Sharon also had her students collaborate to complete a worksheet posted online, working from separate devices. James reported using the Notability app, describing it as allowing him to “highlight stuff [in a digital document] rather than me actually making the corrections ... [and] record audio while I was doing that, almost like a screen cast.” The usage of CALL in these instances entailed a clear integration of technology in a new and transformative way in these classrooms. Thus, the qualitative data do reveal more variation in CALL activities than the quantitative data.

What is the Relationship between the Teachers’ Instructional Use of CALL and their Process of Learning about Using CALL?

Authentic Context and Authentic Activities

Herrington and Oliver (2000) define an authentic context for learning as a physical environment that has not been simplified in any way so that it is as close to real life as possible. The learning context for these teachers was thus clearly an authentic context. These teachers were learning about technologies in order to apply them almost immediately in their live classrooms with their real students. As Sharon explained, her district-level administrators openly acknowledged the fact that the teachers were “building the plane and flying it at the same time.” These authentic activities were complex and ill-defined for the teachers, characteristics which Herrington and Oliver (2000) also suggested are key to authentic activities in situated learning environments. For instance, James explained that he experimented with several different digital document management systems before settling on his current system.

The teachers also demonstrated that they felt that the pedagogical context should govern how technology was used in the classroom. As James stated, “technology in and of itself isn’t good but ... when you can pair it with best practices then there’s really some ... game-changing things out there.” Sharon agreed, stating, “good teaching is good teaching, so if you took away technology, if you’re a good teacher, you should be able to figure out a way to teach [the topic].” Thus, when reflecting on their training, the teachers indicated a preference to use technology to support the extant pedagogical practices in their classrooms; as Sharon said, look for “what works.” This resulted in the creation of CALL activities that supported what the teachers were already doing. For instance, a significant majority of the CALL activities were individual, which connected with the teachers’ stated beliefs that students needed time and space to explore their own interests. Additionally, the CALL activities had strong fit and connection to the curriculum and to student ability level, supporting the notion that they were chosen and implemented because of their adherence to previously established class goals and objectives. As the curricula had a strong grammar and vocabulary focus, the CALL activities largely consisted of a focus on form over meaning. Their approach allowed the authentic context to dominate the choices that they made in using CALL.

Learning from Others: Accessing Models and Alternate Perspectives

Within the framework of situated learning, learning from others is key (Egbert, 2006; Herrington & Oliver, 2000). The teachers in the study did have an opportunity to access expert performances and modeling as a part of formal professional development in their schools. All four of the schools employed technology specialists who supported multiple subject areas in educational technology, with no indication that they had specialized training in CALL. In Karen’s district, this individual’s title was “Technology (Tech) Integrationist,” defined on a public website as someone who “[assists] teachers as they work to integrate technology in meaningful ways.” Karen also discussed the extensive training her school went through with “somebody from Apple who came in and trained everybody on the iLife suite” when they first transitioned to one-to-one. After the initial training, Karen said that now “a lot of it is all on our own.” Sharon’s school gave her the option of finding resources at the regional level before the 1:1 initiative was rolled out. She took five online classes through a local educational agency, as she said, “to figure out what Twitter was, what a professional learning network was ... and other technology pieces.” The use of the term “technology pieces” suggests a separation from CALL pedagogy, emphasizing tools as separated from task, environment, and content. As such, despite the presence of a type of expert performance and process modeling, one cannot say that this learning opportunity represented

situated learning. And indeed, teachers' practices did reflect the fact that this coaching focused on the tools and not on CALL per se, as they frequently used new technologies to repeat old practices with technological enhancement.

Furthermore, although Herrington and Oliver (2000) argued that situated learning opportunities must offer learners the chance to repeatedly examine the resource or topic from others' perspectives, the teachers in the current study consistently described themselves as being very comfortable with exploring technology and creating CALL activities on their own. Karen stated that further training is "not even the issue," instead preferring her administration to "allow us the opportunity to seek things out." Jennifer agreed, stating: "I prefer to sit at home and play with it. I think technology is more of that; you sit and play with it and figure out how it works." This experience of learning about CALL was reflected in the instructional practices of the teachers, who focused on inserting CALL tools into extant pedagogy and curriculum, frequently without attending to transforming their practice. Their school environment encouraged and supported this learning.

Learning with Others: Collaboration, Reflection, Coaching, and Assessment

Collaboration in situated learning refers to working in a group to accomplish a task (Egbert, 2006; Herrington & Oliver, 2000). The teachers in this study described learning about CALL through collaborating on an ad hoc basis. Three of the four teachers had worked together in the past to develop a telecollaborative project where their students worked together asynchronously and synchronously to prepare presentations on a cultural topic. Other forms of collaboration involving CALL were not possible as a regular part of the school environment, given the teachers' isolation as the only Spanish teachers in their schools. Opportunities for reflection were also largely done informally, at the whim of the teachers. As Sharon explained, "I started tying in with other Spanish teachers and oftentimes you know, tweeting on Twitter." This shows that their learning opportunities did not necessarily fit this characteristic of situated learning, in contrast with other research on successful teacher learning about CALL (e.g., Dooley & Sadler, 2013; Williams, Abraham & Bostelmann, 2014).

The teachers did describe coaching and scaffolding as an important part of their learning processes. As mentioned above, the schools often provided a tech integrationist whose job it was to offer modeling and coaching to teachers. Recall that, although these specialists did work with teachers to adopt technologies, their expertise did not necessarily relate to CALL pedagogy. Other learning opportunities took place in the teachers' online communities and professional networks, where more support for CALL was provided. James described his process of identifying appropriate CALL activities for his

students thusly: “I do Pinterest, and I get a lot of ideas from reading other teachers’ blogs and [going to] the [state conference for language teachers], and different things like that. And I’ll get an idea, [and think], ‘Oh I gotta remember that ... when I teach this topic.’” Although many of these learning opportunities did lead to pedagogical transformation, in all cases, these processes were informal, ad hoc, and not systematically promoted or applied. These online communities and professional networks also did not consistently include collaborators who knew or understood the teachers’ contexts or students (Kessler, 2006).

Finally, one must consider if these teachers had access to authentic assessment in the course of their CALL training; recall that authentic assessment in situated learning allows for revision, is integrated with the task, includes multiple criteria, and has valid scoring (Cutrim Schmid & Hegelheimer, 2014; Herrington & Oliver, 2000). Informal self-assessment was clearly an important part of these teachers’ experiences, as evidenced by Sharon’s observation that “sometimes it does [work], and sometimes it doesn’t.” James also suggested that there was a lot of “trial and guess” in his work. This type of assessment was faithful to the context and integrated with the task, but it did not explicitly examine multiple criteria or require any formal report on what they had done that could subsequently be scored (Herrington & Oliver, 2000). In addition, several of the teachers indicated they never had observers who were qualified to assess their use of CALL. This lack of access to experts trained in best practices for CALL integration could be seen in a variety of ways in their practice. Teacher-centered CALL activities were well executed and polished, well connected to the students’ abilities, and well aligned with the curriculum. However, if the teachers had been given clearer criteria for evaluation based on CALL principles, it is likely that they would have adapted their practice accordingly, for instance, moving to a more transformative and integrated implementation of CALL that made better use of the 1:1 environment (Cutrim Schmid & Hegelheimer, 2014).

Conclusions

Through the theoretical framework of situated learning, used widely in research on CALL training, it was possible to trace the connection between how the teachers learned about CALL and how that did or did not lead to what Cutrim Schmid (2011) called “transformative changes in practice” (p. 265). The absence of some components of situated learning corresponded with areas of inconsistency or challenge for the teachers, echoing findings by other researchers looking at CALL teacher education (Dooly, 2009; McNeil, 2013).

Two important implications emerge from the findings in this study. First, the learning opportunities that were provided to these teachers by their schools were not always sufficient, and their ad hoc, informal learning formed the basis for much of their transformation in CALL instruction (Cutrim Schmid & Whyte, 2012; Kessler, 2006, 2007; Klette & Carlsten, 2012). Secondly, and relatedly, current research approaches to in-service teacher learning need to move beyond the idea of formal coursework and become more inclusive of alternate contexts for learning, including informal learning without a designated instructor or course of study. The growing influence of online communities offers a powerful alternative to tool-specific, school-based training, and this and other research suggests that schools could develop more ways to encourage, give credit for, and assess FL teachers' success in learning from these alternate opportunities (Dooly & Sadler, 2013; Wesely, 2013). Teachers are becoming more informed about what does and does not work in their CALL training (Maftoon & Shahini, 2012; McNeil, 2013; Williams, Abraham, & Bostelmann, 2014), and researchers should consult with these increasingly involved and informed in-service teachers in generating new ideas for CALL training and encouraging the development of innovative practices.

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Acknowledgments

This research was supported by grants from the Iowa Measurement Research Foundation Grant Program, the Social Sciences Funding Program, College of Education Research Fund, and the Hazel Prehm Fund, all at the University of Iowa.

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