

Whatever Happened to the CALL Revolution?

Arthur Huber*

【Abstract】

Computer-Assisted Language Learning (CALL) has been employed from concept to use since as early as the 1960s (Chapelle, 2001, 2007). The 1980s elevated CALL to a higher status as a distinct category with a much more defined purpose and potential. However, since that time, progress has been hindered by a variety of circumstances, including a fundamental disconnect between sound learning strategies and subsequent utilization and deployment as technology progressed. This paper briefly examines the CALL environment, past to present, from its nascence to a stalled medium of limited efficacy. Addressing this conundrum, as well as potential pathways toward more efficacious approaches, this paper argues for a type of CALL renaissance, with expectations based on cross-disciplinary research aligned and moving with current technology.

【Keywords】

CALL, Language Learning Technology, Virtual Worlds, VR, TBLL

*Hirao School of Management, Konan University

1. Introduction

During the 1980s and into the 1990s, computers were revolutionizing the world, and, it was hoped, they would revolutionize education too. There were remarkable changes in both efficiency and productivity. As the Internet grew, so did the ability to interact with and share information with people around the world. Thus, the world itself came to rely on software and computing systems, with educational institutions often leading the charge for experiments, advancing ideas, and hopefully, initiating breakthroughs (Chapelle, 2001). Classrooms of the future were imagined to be technologically-infused, aiding teachers and students alike in a seamless blend, and allowing the pursuit of tailored learning tasks and perhaps an immersive semi-virtual environment (Luppicini & Haghi, 2013). Surely, an augmented reality would soon exist that could offer the optimal learning space for anything to be practiced and mastered instantly.

Today, however, a teacher is still a teacher and a classroom has not changed much either. Like most predictions of the future, few of the envisioned changes actually took place, while most things remained the same. It was hoped, for instance, that interactive software programs would become an essential complement to the language learning process, allowing students to quickly master concepts and targeted language outside of class, a perfect complement to in-class work. Yet, as most educators know, such interactive software programs have proven atypical in the modern classroom. At present, there still exists no particular language learning software that properly complements a learner's progress in tandem with a class. Is this really how far we have come since the '60s, '70s, '80s, '90s, and even the 2000s?

Still, this is not to declare that any and all technological advances have had no impact on the modern classroom. The seemingly infinite amount of information and resources digitally available compared to the past is almost unfathomable. In fact, educational institutions today have more at their fingertips than at any point in the past. Furthermore, the emergence of online courses has had a profound influence on accessibility. Why, then, are we not seeing this transfer to learning efficacy and results? More to the point, why are language learners still struggling when so much technology is at their disposal?

2. A Brief History of Progress

For a time, education and technology did move in tandem. Surprisingly, language learning education was addressed early on with the assistance of mainframe computers and the incorporation of computer algorithms to create programs that emphasized recall and repetition, often through the use of e-flashcards, word matching, cloze tasks, visual accompaniments, and/or playable audio files (Chapelle, 2001, 2007). Clearly, the idea of spaced repetition and associative patterns found its way into the programming of language-learning software from the start (Egbert & Hanson-Smith, 1999).

Efforts to address social learning were taken seriously as well. Creative advances such as telecollaboration, online classrooms, virtual worlds, and real-time group chats provided more human-linked experiences to collaborate, negotiate meanings, and practice the language actively (Egbert & Hanson-Smith, 1999; Harper, Chen, & Yen, 2004). Thus, the recognition of language as a socially dependent tool became an integral fulcrum as it developed through its various platforms.

Simultaneously, software programs matured beyond randomized e-flashcards, with more consideration given to learner levels, motivation, and interest. Thus, software became more distinctly leveled and visually attractive, encouraging a “play and learn” approach, often inspired by advances in video gaming, graphics, and processing power (Chapelle, 2001, 2007). No longer were learners simply interacting with simple texts, images and audio files, but also a diverse array of multimedia along with gamification attributes. Aesthetics, realism, playability, and overall design of the e-learning environment were all considered as seriously as the target language itself (Flores, 2015). Such changes were applied across various mediums, from microcomputers to tablets and the smartphones of today.

As for classrooms, educators attempted to link relevant technology and employ it wherever possible in the ongoing need to keep students engaged and motivated (Arnold-Garza, 2014). Blended learning and flipped classrooms, for instance, allowed students to access materials outside of class and learn at their own pace, while teachers could thread online resources into lessons to better utilize class time and cultivate a productive environment to practice the target language (Zohrabi, 2011).

For those classrooms that could afford it, interactive whiteboards (IWB) replaced blackboards and whiteboards, giving teachers access to digitally interactive displays rather than toggling between projectors and computers, or jostling an array of input and output cords. On the other hand, IWBs were still plagued with the same technological issues such as freezing, incompatibilities, lag time, frequent updates, and regular maintenance, not to mention the training necessary to be adept at the new tech (Smith et al., 2005).

Eventually, tablets and smartphones had their own evolutions, both in technical ability and overall popularity. Tablets, for a time, were heralded as the next step towards an all-digital classroom – perhaps even replacing textbooks (Ditzler, Hong, & Strudler, 2016). Smartphones, too, allowed real-time communication, as well as applications that could add to the repertoire of the language teacher and language learner. Dictionaries also became instant and digital, with translation tools being able to facilitate the scanning of foreign texts for immediate comprehension.

Given all these advances in technology, it would have seemed logical, and quite inevitable, that language learners would have made greater gains in shorter amounts of time than compared to 30-40 years ago, yet this has not been the case. Several factors along the way have disrupted such an idealized blend of language learning infused with technology.

3. Divergent Purposes

Where did all these digital tools go astray? An answer might lie in the investigation of each vein of technology and its inevitable shortcomings.

3.1 Profit-driven language learning

One of the most blatant departures from nobler language learning goals has had to do with contrasting objectives; that is, financial incentives have taken precedence over actual user success rates. Whereas universities tended to lead the industry, often backed by grants and other funding, the industry itself ultimately had to find its own financial path forward. For instance, the company known as Rosetta Stone Inc., which was founded in 1992, has done significantly well in its rise to being one of the most

recognizable types of language learning software (Aldrich, 2009). The program itself was based on artificially immersing a user in a target language by showing images repeatedly while simultaneously playing words, phrases, or sentences in full, typically without additional explanation, the idea being that after a user was exposed to such images, combined with targeted lexis and syntax, a user would learn “naturally” (Krashen, 2013). Once an easily affordable CD-ROM, this same software increased dramatically in price once it expanded and sold packaged multi-level software (Schlosser, 2007).

Another contributing factor was Rosetta Stone’s incorporation and eventual Initial Public Offering (IPO) in 2008. By 2009, it was officially listed on the NY Stock Exchange and its packaged price cost more than 10 times its original CD-ROM (Aldrich, 2009). This was likely the result of not only answering to shareholders, but also costly marketing and the addition of extra features such as voice recognition. Unfortunately, most of these add-ons did not affect learner attrition or general competency, but did at least give the impression of a professional and well-funded software company and program (Krashen, 2013; Nielson, 2011; Schlosser, 2007).

Despite such faults, Rosetta Stone’s marketing strategy and financial success seemed to become a paradigm for other language learning software companies, perhaps even for those aiming to upend Rosetta Stone’s market share and seemingly ubiquitous presence. Regrettably, there were little, if any, novel changes in the language learning software market. In essence, these programs failed to take into account a multitude of research, not only in language learning as a field in itself, but also in other fields such as educational psychology, linguistics, and cognitive science. Certainly, these considerations would have helped language learning software suit the needs of learners more appropriately. In turn, this led to a kind of fossilization of research-driven software, which often integrated only the most basic learning strategies such as spaced repetition of audio/visual flashcards rather than utilizing years of progress to address overall user achievement.

3.2 Inherent flaws

As for the disconnect between price and overall effectiveness, one may suspect that the underlying language learning approach of the Rosetta Stone software, and perhaps other programs, may have been suspect from the outset. To illustrate this point, one need not look beyond the underlying concept guiding Rosetta Stone’s mantra: “learn like a baby.” This simple slogan directly contradicted research associated with how adults actually learned a second or foreign language (Brown, 2014). In other words, while the company had sleeker, more expensive products, the results of its efficacy were likely no better than when it was first launched in 1992 as a much cheaper, utilitarian software program (Nielsen, 2011).

Further evidence of inherent flaws across other mediums of CALL prompts yet another question: if programs were built using faulty educational theories, is this problem more widespread than we first believed?

3.3 Fossilization of CALL technologies

At the very least, there has been a fossilization of educational technology with regard to its approach and student success rates, particularly with language learners. Students today are no more successful when given technological resources to aid their

learning than 20-30 years prior. In effect, there has been a lack of accountability and collaborative effort towards building and monitoring increasingly successful CALL technologies. Rather than having an array of research-driven CALL technologies easily accessible to teachers and students alike, both educators and learners must wade through a hodgepodge of websites and dubious software to find something useful.

Fortunately, not all work done in CALL has been for naught. There exist resources that do aid with language learning and align with current and previous research. Examples of such resources, particularly for English language learners, include *compleat lex tutor*, *mReader*, *esl-lab*, *English Central*, as well as various websites dedicated to non-native students that are leveled appropriately.

At the same time, these websites are still separate resources, mostly for teachers to use and guide students, thereby lacking a comprehensive and immersive language learning software that utilizes all facets of research and also takes into account the history of CALL in their construction. The current strongholds in the market such as *DuoLingo*, *Rosetta Stone*, *Pimsleur*, and *Babbel*, all fail to produce consistent user success and overall fluency (Wagner & Kunnan, 2015). Alas, this trend does not seem to be changing with CALL's schizophrenic and scattered resources as well as the field's general stagnation.

3.4 Online Courses and Massive Open Online Courses (MOOCs)

Perhaps the largest paradigm shift away from the standard physical classroom was, ironically, the absence of physicality itself, and the introduction – and now inclusion – of online courses as well as Massive Open Online Courses (MOOCs). Today, however, neither has been a straightforward success story. One reason is due to negative public perception. For example, receiving a degree with coursework entirely based online, even from a reputable institution, is often criticized, not taken seriously, or even derided (Norton, 2013).

MOOCs, in contrast, were created and led by some of the premier institutions of the United States such as Massachusetts Institute of Technology (MIT) and Stanford University. Despite this intrinsic credibility, pass rates remained low and enthusiasm waned over time (Gore, 2014). MOOCs and other online classes for language learners provided certain progressive features, such as cloud accessibility, a social platform, and overall convenience, though much like the tribulations of language learning software, undesirable aspects including high attrition and low success rates seemed to be common as well (Gore, 2014).

3.5 Virtual Worlds: What Could Have Been

One area that actually took into account work done since the 80s and 90s with interactive e-environments was a type of virtual world platform, most notably, *Second Life* (Baker, Wentz, & Woods, 2009). First conceived of as *LindenWorld*, and later evolving into *Second Life*, this platform attempted to provide a virtual world where creators and users had the flexibility to build what they wanted and be who they desired (Kaplan & Haenlein, 2009). Such a platform also intrigued educators, as well as those working in CALL. Soon enough, there were virtual classrooms, as well as virtual tasks created to help users interact with and use targeted materials, and in this case, a second or foreign language (Kaplan & Haenlein, 2009). Despite its progressive ideas and even the inclusion of a virtual currency before the digital currency boom, *Second Life*

floundered in the marketplace and was ultimately relegated to a niche group of users. CALL researchers, educators, and enthusiasts mostly abandoned it as a viable solution for language learners (Inman, Wright, & Hartman, 2010).

4. Current Technology and a Realignment

While much more could be said about the failed fruition of CALL over the past 30 years, it is important to keep in mind that progress has been made in various fields that can contribute to a rejuvenation, and perhaps a renaissance, of CALL.

4.1 A way forward: the cross-disciplinary approach

One of the first solutions for developing CALL to its potential is the inclusion of research across multiple disciplines, with some of the more obvious fields including linguistics, educational psychology, computer science, and cognitive science. However, it is imperative that CALL be open to sound research from other areas of relevance that may also inform developers such as behavioral psychology (e.g., motivation, emotions) and gamification. Most importantly, users of CALL should expect to find consistent gains in overall fluency, with reliable, accurate measurements to prove or disprove the quality of the medium and program being implemented.

4.2 Task-based language learning (TBLL)

Another realistic step forward may lie in the assistance of task-based language learning (TBLL) combined with CALL. Like other veins of CALL, TBLL has had its own advances as well as missteps. If a composite program could be built in such a way as to take advantage of select mediums, then TBLL should be able to deliver productive tasks that ultimately help to build fluency in the CALL domain (Egbert & Hanson-Smith, 1999; Pierson, 2015).

4.3 Adaptive software

A category which has had robust development, mostly in psychometrics, is adaptive software (Chapelle, 2001, 2007). Such programs have been devised to better evaluate test-takers, though little has come in the way of adapting to actual learners. Therefore, this area of CALL, seemingly relegated to computer assisted language testing (CALT) needs to balance assessment with goal-oriented, adaptive learning.

4.4 Virtual Reality (VR) and Virtual Worlds

One of the current trends that could parlay previous work with virtual worlds as well as TBLL is in virtual reality (VR). A truer, immersive experience could enable a user to actually feel as if he or she were in a foreign city, and have leveled tasks for a target language. This could allow users to gain confidence within a safe environment that mirrors the real world, while mastering specific tasks to motivate them along the way. Truly this could be one of the most exciting potentials to spearhead a true CALL shift.

5. What Teachers and Learners Should Demand

5.1 Ode to the language teacher

To language teachers – it is time to demand more rigorously tested, research-driven resources and software to aid in teaching. As educators and researchers, we

should come together to deliver the best CALL tools for our students, thus enabling and empowering our roles in the classroom and at the same time, providing our learners with the optimal learning environments to thrive.

5.2 *Ode to the language learner*

As learners, there should be demands for accountability, for the money spent on software that promises fluency and the resources intended to help one learn in the best ways possible. Furthermore, learners need to trust what is being given to them – that it is grounded in research and truly supports their learning progression.

6. Conclusion

Despite its 40-year history, CALL has proven it has much to learn from itself as a true enhancement to other traditional methods of teaching. Teachers and learners need to insist on improved resources if real change is to take place.

Above all, there should be an acknowledgment of the present standstill of CALL and a necessary, reinvigorated effort to produce better e-learning materials. VR is only one example where great change may happen, though augmented reality also shows significant promise. If there is to be a revolution in CALL, it is truly overdue.

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