

# Using social technologies in Computer Assisted Language Learning: development of a theoretical and methodological framework

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**Abstract.** The use of social technologies in language learning is becoming more widespread. Although theoretical and methodological frameworks exist for the use of these technologies for language learning, their applicability is still unclear. To fill this void, the current thesis sets off to explore the theoretical framework of Papert's constructionism as a pervasive theoretical paradigm on which the use of social technologies in CALL can draw upon. In the paper the progress achieved in the current thesis is outlined, as well as the future action plan.

**Keywords:** Computer assisted language learning; social technologies; social constructionism; social constructing platforms; culture

## 1 Introduction

Gamper and Knapp [2] define Computer Assisted Language Learning (CALL) as “a research field which explores the use of computational methods and techniques as well as new media for language learning and teaching”. The popularity of the field of CALL has increased rapidly, especially with the advent of recent technological developments. In recent years, social technologies receive substantial consideration from CALL practitioners, as well as from instructional designers and researchers. Each stakeholder explores these technologies from different perspectives aiming at describing and explicating how these technologies are used, by whom and for what purpose. CALL professionals employ these technologies in their everyday practice; whereas programmers, designers and professionals in the field of Technology Enhanced Learning (TEL) and Human Computer Interaction (HCI), put great effort to improve these technologies in order to enhance the learning experience within the framework of Computer-Assisted Instruction (CAI).

The potentials of these technologies have expanded the possibilities of teaching and learning and several projects have evolved which exploit blogs and wikis as social writing platforms. As Alexander [1] points out, “social writing platforms appear to be logistically useful tools for a variety of campus needs, from student group learning to faculty department work to staff collaborations”. However, the potentials of

these technologies are not limited to this framework. This study aspires to widen the applicability of these technologies drawing on the theoretical framework of Papert's constructionism [3-5]. Papert's theory can be summarized in his vision of a new educational environment in which learners build meaningful knowledge artifacts by taking advantage the ubiquity of new technologies around them.

## **2 Proposed research**

The main focus of this thesis will be on investigating Papert's constructionism as a fertile ground for establishing a theoretical and methodological framework under the umbrella of which social technologies can be put into practice in the field of CALL.

More specifically, this research will focus on the following key aspects:

1. Explore the current state-of-the-art in CALL.
2. Explore the potential that social technologies offer in facilitating teams of learners in order to socially construct an online artifact.
3. Develop a code scheme that captures the core dimensions of social technologies as social constructing platforms.
4. Explore the potential of social technologies for interlinking indoor and outdoor activities under the framework of social constructionism.
5. Explore and compare the affordances of different social technologies as social constructing platforms.
6. Validate of the established framework of social constructionism in a complete situation.

Five interconnected studies will be conducted in order to explore the aforementioned aspects, the outcome of which will be a theoretical and methodological framework that will guide practitioners and researchers to put constructionism into their practice. The theoretical framework is expected to have a form of a map of conceptual directions including a concise description of the major variables operating within the language classroom together with the researcher's overarching view of how the variables interact to produce a more dynamic "model" of language teaching and learning. Thereafter, the conceptual directions of the theoretical framework will be set into practice in a comprehensive methodological framework. The methodological framework is expected to have a form of a step-by-step manual for possible future implementation of such a methodology by language (or other) instructors. A cyclical process of guidance is expected to enable instructors and learners to participate actively in the social construction of language.

The established theoretical and methodological framework will then undergo a validation process in a complete situation. In the sections that follow the progress achieved so far as well as the future action plan of the current thesis is outlined.

### **3 Study 1: Mapping the landscape of Computer Assisted Language Learning: an inventory of research State-Of-The-Art in CALL**

Research development in CALL has been explored by building a map of existing research work in the field [8]. Based on a corpus of 163 manuscripts, published between January 2009 and September 2010 in four major journals devoted to CALL, the range of topics covered under the umbrella of CALL was illustrated and a holistic view of the field was presented. A six-stage approach was followed which comprised of (a) development of the 2009-2010 CALL corpus with 163 manuscripts, published between January 2009 and September 2010 in four major journals devoted to CALL; (b) literature overview and extraction of codes from the corpus; (c) refinement of the extracted codes with the help of a focus group; (d) construction of the CALL chart Version 1.0 based on the elaborated coding scheme; (e) refinement of the CALL chart Version 1.0 using content analysis and development of the CALL chart Version 2.0; and finally (f) evaluation of the proposed structure and inclusiveness of all categories using the card sorting technique and development of the CALL chart Version 3.0.

The development of the CALL chart illustrated the breadth of topics with which CALL researchers are concerned with, but also the existence of common patterns and orientations amongst them. The research issues undertaken highlight the interdisciplinary of the field and seem to raise a dialogue between the fields of Second Language Acquisition and Foreign Language Teaching, Instructional Technology, Pedagogy, System Design, Psychology, Technology Enhance Learning and Human Computer Interaction (HCI). Additionally, the CALL chart reveals topics that attract researchers' attention for more than a decade, namely CMC, CALL materials and CALL applications in support of language skills and other competences. From the current trends of research to the near future, a major area of growth seems to lay in web 2.0 technologies, mobile devices and virtual learning environments. Current research held in these areas unfolds the potentials of these resources in bringing authentic settings in the language classroom, thus helping the instructors to provide learners ample opportunities to use the foreign language in real-life situations. This study informed the state-of-the-art in CALL research and allowed for under-investigated areas to come to sight. Amongst these areas is the use of social technologies; although is one of the most researched area, yet, Wang & Vasquez [10] point out that the potentiality of is not fully exploited, whereas their use is still not clearly framed in theory. To fill this void, this study explores the grounds the use of social technologies under the framework of constructionism.

### **4 Study 2: Introducing New Perspectives in the Use of Social Technologies in Learning: Social Constructionism**

This study included a qualitative study of the use of social technologies, explored in the context of an intensive 650-hour Greek language course. Qualitative content analysis of instructors' field notes, students' and instructors' reflections, interviews and a focus group was employed aiming at identifying the use of social technologies as a

platform for constructing an online artifact. To triangulate the findings, the study also collected data by observing students' activity with social technologies. A code scheme was developed which manifests the use of social technologies as a social constructing platforms identifying its major dimensions: exploration of ideas, construction of online artifact and evaluation of the constructed artifact (see Table 1). Actions within each dimension that indicate the manifestation of social constructionism were also identified. This study revealed results in favor of the use of social technologies as social constructing platforms suggesting a new framework for their use [7].

**Table 1.** Code scheme that manifests the use of social technologies as social constructing platforms

Exploration of ideas	<p>Orientation: Text units which refer to setting up the goals of an activity, providing objectives for a specific task (often the instructor challenges the students to identify why a specific activity takes place and how it should be formed).</p> <p>Brainstorming: Text units which refer to making a list of ideas or content that could be used in the constructed artifact. Text units also refer to sharing notes and ideas within social network channels.</p> <p>Material exploration: Text units which refer to exploration and collection of material by taking photos from real situations that learners experienced and by searching the web. The issue of cultural information exchange is prominent here since students often conducted activities out of class in order to collect material.</p>
Construction of artifact	<p>Outlining: Text units which refer to translating material from English to Greek, mapping the main and supporting ideas (before moving to putting the ideas down).</p> <p>Editing material: Text units that refer to editing material, during the construction of the artifact. Editing material includes adding links and other multimedia material. Editing the material is rather a social than an individual task. Editing and revising the artifact.</p>
Evaluation of artifact	<p>Revising: Text units which refer to the process in which the participant corrects production-errors. Spell check and automatic correctors are used. Revising is rather an iterative than an instantaneous process.</p> <p>Peer reviewing: Text units which refer to peer reviewing the artifact in terms of organization, content and language usage. Comments were also employed for providing feedback within social technologies as a method for monitoring and evaluating a certain activity.</p> <p>Instructor reviewing: Text units which refer to the instructor reviewing the constructed artifact in terms of organization, content and language usage.</p> <p>Presenting/Publishing: Text units which refer to students presenting the constructed artifact to their classmates. Publication of the constructed artifact was done also via social communication channels (Facebook).</p>

## **5 Future research**

### **5.1 Study 3: Comparison of the affordances of different types of social technologies as social constructing platforms**

Drawing from the results of the previous study, this study will explore the potential and affordances of different types of social technologies as social constructing platforms (social network sites, social software and digital artifacts sharing platforms). Several social technologies will be employed by teams of learners with an aim of constructing an online artifact. A qualitative research design will be employed aiming at identifying the potential and the addition that each technology brings in a social constructionism framework. To triangulate the findings, the study will also collect data by observing students' activity within social technologies.

### **5.2 Study 4: Social constructionism: a linkage for indoor and outdoor learning activities**

Limited attention has been paid up to now by researchers to the fact that language cannot exist and cannot be learned in a vacuum but is penetrated with cultural fragments [6]. Language learners can be exposed to these cultural fragments in in-class activities (through videos or in their interaction with the instructor) but most effectively in a variety of outdoor settings (parks, museums, restaurants, cafeterias, labs, home, festivals).

The combination of indoor and outdoor activities throughout the language lesson is not innovative. However, in most cases outdoor and in-class activities are performed separately; without any interconnection between them [9]. The absence of a clear linkage between these activities causes confusion to students while depriving them of the opportunity to observe and seize learning opportunities presented to them. This study aims at employing the framework of social constructionism established in Study 2 for bringing together indoor and outdoor activities in the language classroom.

### **5.3 Study 5: Validation of the Proposed Theoretical and Methodological Framework**

The outcome of all previous studies, namely the proposed theoretical and methodological framework, will then be validated in a complete situation, where one (or more) language instructors will put theory into practice, thus validating or refining the proposed framework.

## **6 Significance**

This thesis envisages in providing the fields of CALL, TEL and HCI with a theoretical and methodological framework under which social technologies will be touched upon. The most important significance of this contribution is to move the discussion about the use of social technologies further in the direction of social constructionism. The emergence of this prospect is expected to supply designers, instructors, research-

ers and practitioners with a better understanding of the affordances of social technologies, leading to a new perspective of their use. The emergence of this framework can also serve as a formula providing guiding principles for curriculum design, materials development, and classroom practice.

Social constructionism provides the perspective of knowledge creation through the construction of an online artifact within social technologies, allowing learners to think and understand abstract scenarios by linking them with a tangible artifact. From the perspective of design, this thesis views constructionism as a fertile ground for learners to approach and experience learning as designers and researchers of an online artifact. Although we frame social constructionism within the limits of CALL, we believe that the emergent dimensions can serve future efforts to support learning, collaboration and problem solving.

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