

On the Applications of Computer-Assisted Language Learning in a Military English Context

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On the Applications of Computer-Assisted Language Learning in a Military English Context

Smith, Michael Dean* · Kim, Dongyoung**

I. Introduction

The necessity for English language education in specialized vocational environments has resulted in English for specific purposes (ESP) developing into an increasingly prominent component of English as a foreign language (EFL) training and research (Johns & Dudley-Evans, 1991). Principally, focused ESP enquiry was born out of the necessity for trade linguas across a number of disparate fields - including aviation, tourism, medicine, and science, when stakeholders became aware that general English language education did not meet their decidedly specialized linguistic requirements (Bracaj, 2014). According to Hutchinson and Waters (1987), ESP is best described as an approach rather than a *product*, resulting in ESP education not following a set methodology or strict adherence to conventional instructional techniques. Essentially, the goal of ESP is to teach language that is authentic to both the explicit necessities and respective practical endeavors of the genre which it serves. Consequently, ESP instructors are required to provide highly personalized curriculums, theoretically differing in purpose, grammar and vocabulary when compared to general EFL alternatives (Dudley-Evans & St. John, 1998).

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On a global level, EFL education and administrative policies are becoming increasingly entwined (Ricento, 2015), leading to an increase in ESP disciplines. Military English (ME), for example, originated due to the development and continuance of Western-driven multinational military operations and peacekeeping missions throughout the globe. Given the complex nature of distinct military phraseologies and the evident potential for miscommunication during multinational operations, NATO members and their allies chose to elect English as a lingua franca. Subsequently, ME has emerged as an established component of military training curricula around the world (Tick, 2006). As noted by both Juhari (2013) and Saettler (2004), militaries are often enthusiastic early adopters of educational technologies due to their role as drivers of technological advancement. As information technology has become ever more conspicuous, so too has its application in military-based educational settings. In particular, Davies (2002) notes that computer-assisted language learning (CALL) has captivated the attention of both general and specialized educational communities, gradually developing into an influential component of contemporary language instruction that significantly aids in the presentation, reinforcement and assessment of language learning materials.

Beatty (2010) defines CALL rather straightforwardly as "any process in which a learner uses a computer, and as a result, improves his or her language [skills]" (p. 7). ESP, meanwhile, should be viewed as a flexible *approach* to language education, encompassing a variety of theoretical frameworks and pedagogical strategies that may be implemented across a potentially vast range of genres. Consequently, it is the intention of this critical evaluation to present a concise analysis of both the pedagogical merits and deficiencies of the theories associated with CALL, as applied to an ESP learning environment. Specifically, the pedagogical applications of CALL in a ME context will be evaluated and systematically appraised, ultimately establishing a critical justification for its application in said context. Since there have been few studies on military English instruction, any discussion regarding the specific barriers to and merits of incorporating CALL into language instruction in the military would be particularly relevant when implementing various ESP instruction - and CALL in particular - within this specific domain.

II. Literature Review

2.1 Definition of Military English

In spite of the high demand for ME, very few studies have considered the area for research; and subsequently, the functional nature of this ESP variety remains relatively under-explored¹). This is mostly due to the restricted access of researchers to the usage of English language in the military settings for reasons of security, and the investigators' indifference to conducting research for a potentially small audience of military instructors. Given the hindrance to researching ME, definitions are somewhat sparse. It may be viewed, however, as English written or spoken in military contexts, which can be characterized by distinctive phraseology and technical terms. Of the few studies that attempt to define what ME is, Brown (1995) argues that it is a distinctive English register which can be defined in relation to Hallidayan concepts of field, mode, and tenor²: it is distinctive in that it (a) contains a specialized lexicon, (b) is communicated via discernible spoken and written channels such as briefings and messages, and (c) reflects the interpersonal relationship

¹⁾ This makes the differences between implementing CALL in the military contexts and in other English teaching contexts.

²⁾ Field, mode, and tenor are three main variables for the use of a language in Systemic Functional Linguistics. Field reflects the content of a language; mode is concerned with the medium of communication; tenor displays the relationships between users of the language.

between its hierarchical military community users in terms of field, mode, and tenor respectively.

2.2. Three Phases of CALL

As observed by Gündüz (2005), CALL has been utilized by militaries for a number of decades in an effort to educate servicemen on languages used by both allies and adversaries alike. Indeed, it has been noted (Zou, 2012; Beatty, 2010) that Cold War-era political insecurities primarily motivated early research into CALL. Notably, western universities pioneered the use of computers during language learning as a response to the USSR's scientific advances of the late 1950s. Perhaps the most notable example being the Programmed Logic/Learning for Automated Teaching Operations (PLATO) system, which was developed by the University of Illinois in 1959 to assist in the instruction of Russian language courses (Beatty, 2010). The theoretical foundations that guided the use of PLATO were heavily grounded in the principles of Skinner's (1957) influential work on operant conditioning, pedagogically focusing on the explicit teaching of grammar by utilizing linear and repetitive drill-and-practice techniques via the grammar-translation method, with learning further augmented by the frequent use of positive reinforcement (Zou, 2012). Given the relative success of PLATO in a structural-behavioral "wrong-try-again" context (Underwood, 1984, p. 45), these early forays into CALL demonstrated the computer's suitability as a vehicle for delivering language education. This "behavioristic" approach heralded the first phase of CALL, which was to last up until the 1970s (Warschauer, 1996). Ultimately, however, advancements in pedagogical theory were to lead to a substantial paradigmatic shift in the methods with which computers were employed in educational settings, and in education in general (Salaberry, 1996).

The conspicuous rejection of behavioristic teaching techniques coincided with

the rise of communicative language teaching (CLT) theory, signalling the beginning of the "Communicative CALL" phase. The framework for this approach was based on the works of John Underwood (1984), who drew heavily on Chomskyan inquiry into linguistics; notably, Stephen Krashen's (1981) comprehensible input hypothesis. As with CLT in general, communicative CALL focused on communicative competence and the functional use of language forms, rather than the forms themselves (Warschauer, 1996). Specifically, Communicative CALL is epitomized by a cognitive constructivist approach to education, which recognizes that learning is an active and creative process of discovery, expression and synthesis (Petty, 2009). Consequently, the learning dynamic is shifted from "computer as a teacher", towards the more humanistic "computer as a facilitator", naturally leading to a deviation in agency towards the learner.

On a pedagogical level, meanwhile, grammar is now taught implicitly, with the target language being the sole method of communication and, critically, being utilized in a flexible manner and allowing for original responses. As noted by Merrill *et al.* (1996, cited in Beatty, 2010, p. 23), this transference in educational philosophy coincided with the advent of micro-computing in the mid-1970s, leading to a growth in personal computer ownership and the development of a number of CLT computer programs to be used in the instruction of a variety of languages. Nonetheless, whilst the communicative approach was a technological, theoretical and pedagogical improvement over its predecessor, it was also not without its criticisms. Perhaps the most prominent was Kenning and Kenning's (1990, cited in Warschauer, 1996) assertions that CALL consistently failed to integrate into the wider curriculum, whilst also "making a greater contribution to marginal rather than to central elements of the language teaching process" (p. 3).

It soon became apparent that, for CALL to fully realize its potential, steps towards enhancing the integration of language skills and technology into the

language learning process needed to be taken (Yang, 2010). Subsequently, it was the expansion of multimedia technologies and arrival of the Internet in the 1990s that allowed CALL to evolve into its current form. On a theoretic level, "Integrative CALL" takes a social constructivist perspective to language education, promoting meaningful student interaction in contexts that are authentic to their respective learning situations. According to the social constructivist perspective, learning takes place in the context of social interactions (Vygotsky, 1978), and the Integrative CALL emphasizes the social interaction between learners. As with communicative CALL, the role of the computer is to facilitate learning, guiding students to construct their own meanings from educational content. Due to the adaptability of the Internet, however, the participant's learning environment is now dynamic, allowing for purposeful and reflective participation via the promotion of worldwide computer-mediated communication and collaboration. By transferring student interaction away from a "learner-computer" context to the more realistic "learner-learner via the computer" (Yang, 2010) and incorporating authentic content-based paradigms, such as research, simulations and task-based activities, this integrative approach proves to be the closest form of CALL yet to mirroring the philosophies that underpin ESP.

III. Barriers Inhibiting the Effective Practice of CALL in a Military English Setting

Whilst it is clear that CALL is an adaptive and innovative medium of language education delivery, its effective implementation is not without its hindrances. Notably, Salaberry (1996) observes that the potential pedagogical effect of any technology used in a language learning environment is "inherently dependent on the particular theoretical or methodological approach

that guides its application" (p. 7). For instance, given the rejection of behavioristic approaches to language teaching on both theoretical and pedagogical levels (Yang, 2010), the use of behavioristic CALL may result in a "weak" form of computer-mediated language learning. This issue is of particular relevance to military settings, where the employment of behaviorism to enforce discipline and reinforce learning is often a long-held tradition (Juhari, 2013; Beckett, 2011; Swain, 2008). Given this background, military instructors may feel more reasonable applying traditional drill-and-practice or repetitive training techniques during the conditioning of foreign language learning, potentially leading to an insufficient development of language processing techniques (Bani Hani, 2014). As a result, courses for ME are commonly designed around traditional didactic methods (Juhari, 2013). Even the intensive courses implemented by the U.S. Defense Language Institute, perhaps one of the most renowned institutes for military English instruction throughout the globe, largely depend on drill-and-practice and repetitive training techniques in addition to CALL (Defense Language Institute English Language Center, 2017). The curricula of military service academies in Korea also follow this traditional approach and exploit updated but still conventional paper-based military English materials for instruction in an attempt to avoid any educational failure in tightly designed academic schedules³) (Korea Military Academy, personal communication, March 23, 2017; Republic of Korea Air Force Academy, personal communication, March 22, 2017). The situation in other countries is not very different. According to Li (2009), military English teaching in China also typically takes place similar to that of Korea.

Furthermore, for CALL to maximize language learning, a certain degree of learner autonomy should be encouraged (Schwienhorst, 2008). This may involve student-managed reflective practices, such as the establishment of

³⁾ Not all military English instructors in the service academies have experienced CALL, and it is hard to expect for them to implement CALL without any failure.

learning objectives, progress reviews, or self-evaluation. Such activities serve to create an environment that reinforces each student's language learning goals, whilst gradually building an awareness of their personal learning processes. Unsurprisingly, this shift from institutional to individual responsibility is somewhat antithetical to traditional military sentiment and its well-established strategy of utilizing didactic instructional methods (Juhari, 2013). Specifically, the promotion of learner autonomy is conventionally associated with the *humanistic* school of thought (Petty, 2009), a strand of educational theory that is yet to make serious advancements into the military training consciousness (Beckett, 2011).

Finally, whilst the commitment of militaries to the utilization of educational technologies has already been established (Juhari, 2013; Saettler, 2004); evidently, this may not be reflected on an individual instructor basis. Teacher expectations and apprehensions about the benefits that CALL can provide for the language learner will, as in any other educational environment, undoubtedly vary. Consequently, an initial acceptance of language learning technologies may not be forthcoming, with preference given to traditional methods of instruction which are assumed to be 'safer' (Bani Hani, 2014), potentially relegating CALL to an ineffectual educational side note. With this in mind, military instructors may be reluctant to implement effective CALL practice probably due to their own preconceptions, backgrounds and established skill sets.

IV. The Pedagogical and Theoretical Merits of CALL in a Military English Setting

The rationale supporting CALL in a ME context can be varied, yet intrinsically dependent on the requirements of language learners and the military itself. Specifically, learning that occurs as a function of the respective activity and social motivations from which it stems may be viewed through the lens of Lave and Wenger's (1991) theories on "situated learning". This perspective is integral to understanding not only ME in an ESP context, but also military education in general. A fundamental component of contemporary military service, for example, is participation in combined exercises contained within multinational theaters of operation. In an effort to help facilitate this requirement, pre-operational training could theoretically include web-based sociolinguistic research activities and computer-mediated English language communicative tasks, which will result in integrative CALL facilitating the learners' "proactive participation in an increasingly globalized society" if properly executed (Bañados, 2006, p. 534). This form of experiential learning allows participants to interface with the world beyond the classroom, during which the features of the respective culture(s) that practice the target language are scrutinized as well as the language itself. Clearly, this approach enhances both cultural and linguistic understanding, whilst also contributing to the authentic learning environment that is cited as a major pedagogical requirement of both integrative CALL and ESP (Tsai, 2013). Further authenticity may be provided by integrating language learning into occupationally-relevant collaborative computer simulations, including voice procedure, role play and leadership tasks. These activities provide students with the opportunity to practice authentic military language and skills, with the arrangement of language instruction around non-pedagogically specific materials theoretically embodying a "strong" form of CLT (Zhao, 2011).

Moreover, situated learning via collaborative CALL supports language learning through peer support. Here, learners may be placed in semi-autonomous situations, and participants must negotiate the learning behaviors of their fellow team members in an effort to actualize the activity's desired language learning outcomes (Beatty, 2010). In this instance, learning may be realized via

a procedure in which "a knower guides and supports the learning of another, providing a kind of scaffold" (Richards & Rodgers, 2014, p. 181). This provision of support and guidance at appropriate points in the learning process assists students in processing tasks that may have otherwise been too difficult to realize independently, a distance which Vygotsky (1978, p. 86) refers to as the "zone of proximal development" (ZPD). Specifically, learning via the ZPD supports concepts that are critical to effective military interaction, such as camaraderie, teamwork, and communication. Crucially, this communal learning environment not only allows participants to trade advice, experience and knowledge, but also helps create a common linguistic frame of reference, potentially aiding future learning (Schwienhorst, 2008). By way of example, small groups of learners may work together, utilizing concordancing software to check the meaning, syntax, usage, and derivative forms of key ME lexical items. Essentially, this form of cooperative interaction supports the embedding and enhancement of interpersonal communication. Given that servicemen and women are expected to function collectively, commanding junior ranks and complimenting the leadership of others as part of a wider hierarchical structure, this social skill is patently an essential component of the contemporary military psyche.

Furthermore, concordancing — an exploratory-based language learning and research tool — can provide learners with opportunities not only to develop their professional linguistic repertoire but also to raise their linguistic awareness. Whilst Flowerdew (1997) notes that the practical application of concordancing software facilitates both deductive and inductive reasoning, it has also been argued (Johns, 1986) that activities involving concordancing are inherently inductive in nature. In particular, Cheng (2012) argues that the attention paid to patterns of form and significantly the relationship between form and meaning serves to enhance the learning process, allowing students to develop linguistic competence in an effective and critical manner. Moreover,

concordance programs employ authentic instances of specialized language, thereby providing learners with accurate depictions of military-specific lexico-grammatical forms and information regarding the frequencies with which said forms are applied. This process, coupled with a potentially deeper insight into the contextual factors that affect linguistic choices, "pushes students toward an empirically-based understanding of language used for specific purposes" (Belcher, 2006, p. 142).

Additionally, Reinders and Hubbard (2013) note that CALL aids in the monitoring and recording of learner behavior and progress. This not only supports instructors, but also students, who can utilize the available data to increase cognitive awareness of their own learning processes (Schwienhorst, 2008). This increase in learner investment may potentially lead to independent decision making and an improved learning rate via the promotion of psychological traits that are complementary to both general learning and military service, such as adaptability, self-reliance, empowerment and motivation (Petty, 2008).

Furthermore, any increase in confidence and self-efficacy is supplemented by the CALL environment itself, which, according to Schwienhorst (2008), encourages experimentation with contrasting roles via the use of virtual representations. This form of learning potentially reduces the affective filter, thereby offsetting the effect of negative affective considerations, such as language learning inhibition (Krashen, 1982).

Perhaps the most impressive cognitive benefit of integrative CALL, however, is its promotion of critical thinking via the implementation of tasks that, in accordance with Bloom's (1956) taxonomy of learning, require the application of high-order mental processes. Significantly, integrative CALL enhances the learner's cognitive engagement by encouraging the active exploration of virtual learning environments in the pursuit of new information. By participating in personally engaging and creative tasks, learners may establish their own

interpretations and learning experiences via the analysis and evaluation of information. This process conforms to Piaget's (1977) assertion that learning is best served by the active construction of meaning, as opposed to passive percipience. To use a practical example, the ME instructor may facilitate authentic and engaging language learning by instructing students to construct a report, using the Internet to acquire information on a specific piece of equipment used by a NATO ally. By selecting information to save or discard, the process of obtaining relevant information fundamentally requires the application of high-order analytical skills and evaluative judgement. Moreover, the collected information should be sequenced and presented in such a manner that it forms a coherent and cohesive whole, entailing the application of creative skills, thereby sitting on the penultimate level of Bloom's taxonomy "synthesis". When applied to a real-time military context, individuals, groups, and organizations at the tactical and strategic levels are frequently required to use sophisticated cognitive skills to provide creative and effective solutions to a number of demands and complex challenges (Allen & Gerras, 2009).

V. Conclusion

While it is evident that the importance of many of the qualities listed is not exclusive to specialized military environments, they are imperative in the shaping of competent service personnel. The modern soldier is, amongst other things, expected to be able to fulfil the role of both teacher and learner; be self-reliant, yet able to operate as part of a wider team; be highly motivated, whilst also possessing the ability to instil that motivation into others. Perhaps most importantly, however, soldiers should retain the capacity to evaluate situations critically, overcoming increasingly complex obstacles using creative and imaginative means. If implemented efficiently using sound theoretical and

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pedagogical frameworks, ME delivered via integrative CALL can assist in the development of all of these traits: learners learn responsibility and develop their autonomy as independent participants in the community, as they consciously manage the goals of their learning and conduct exploration in the learning process; they can also learn how to lead and cooperate with others, as they actively participate in the social interaction between learners. Thus, it would be beneficial for contemporary militaries to look beyond traditional behavioristic approaches to language education and dedicate more resources to researching innovative and progressive instructional strategies.

Moreover, since there are few studies specific to ME instruction for the reasons outlined in Section 2.1., it can be said that the impact of CALL on ME has not been fully explored. As a consequence, there may be aspects of ME-specific CALL instruction that have not been considered in this paper. There are thus substantial needs for the academic exploration of ME and CALL in their various theoretical and functional forms, including qualitative and quantitative measurements of its impact on learners.

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<Abstract>

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This paper critically reviews the pedagogical benefits and obstacles to applying CALL to military English learning in terms of the theories associated with CALL. The obstacles that hinder effective CALL practice in military settings can be attributable to a) a long-held behavioristic tradition for language learning such as rote memorization and repetitive drilling; b) the antithesis of traditional military sentiment against the shift of learning responsibility from the military to individuals; and c) military instructors who may be incapable of implementing effective CALL practice because of their own preconceptions, backgrounds and established skill sets. However, properly implemented CALL not only prepares learners linguistically and culturally for participating in multinational military operations, but also provides learners with peer support opportunities where they can cooperate with their peers to achieve more than what they are capable of and enhance their interpersonal communication required in the military. CALL also benefits learners by enabling them to monitor their progress and promoting critical thinking.

 Key words : military English, CALL, ESP

 주제어 : 군사영어, 컴퓨터보조 언어학습, 특수목적영어

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