

Effects of CALL-Mediated TBLT on Self-Efficacy for Reading among Iranian University Non-English Major EFL Students

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Abstract

The rich and still expanding literature on TBLT is helping to mature both its theoretical conceptualization and practical implementation in foreign and second language education. Similarly, computer-assisted language learning (CALL) has grown as a field, with the use and integration of technology in the classroom continuing to increase and will continue to play an important role in this maturation process. The present study, hence, reports on an empirical study that investigated the effects of CALL-mediated TBLT on the perceived self-efficacy of Iranian university non-English major EFL students. Through non-probability and convenience sampling, two intact freshmen classes were chosen and randomly assigned as the experimental and the control group. During the treatment sessions, the students in the experimental group received instruction in a CALL-mediated TBLT format, while the control group received no CALL-mediated TBLT instruction but underwent only a task-based instruction on reading without the mediation of CALL. A univariate analysis of covariance (ANCOVA) was run, while controlling for pre-intervention scores as the covariate. A significant effect was found for CALL-mediated TBLT ($F = 81.450$, $p = .000$, partial eta squared = .504), suggesting CALL-mediated TBLT had a positive effect on the self-efficacy perceptions of the students in the experimental group.

Keywords: task-based language teaching, computer-assisted language learning, CALL-mediated TBLT, self-efficacy, reading

Introduction

For the past 30 years, task-based language teaching (TBLT) has attracted the interest of second language acquisition (SLA) researchers, curriculum developers, educationalists, teacher trainers and language teachers worldwide (Van den Branden, 2006). The term was coined, and the concept developed, by SLA researchers and language educators, largely in reaction to empirical accounts of teacher-dominated form-oriented second language classroom practice (Long & Norris, 2000). To a great extent, the introduction of TBLT into the world of language education has been a top-down and process-oriented approach to language teaching that centralizes communicative language teaching at the heart of syllabus design and instructional goals (Littlewood, 2004; Nunan, 2004; Richards, 2005). Centering language education around tasks is expected to give learners an experiential educative process in which they use the target language for meaning making and in which this negotiative language use process will spur and promote the learners' language acquisition (Samuda & Bygate, 2008).

Similarly, computer-assisted language learning (CALL) has grown as a field, with the use and integration of technology in the classroom continuing to increase (Petersen & Sachs, 2015) and will continue to play an important role in this maturation process (Lai & Li, 2011). According to Doughty and Long (2003), technology provides a natural and authentic venue for the realization of the methodological principles of TBLT, and TBLT provides a rationale and pedagogical framework for the selection and use of technology. Ortega (2009a) also presented an in-depth analysis of the “elective affinities” of technology and tasks both in theory and practice. In her view, technology and TBLT align their theoretical emphasis on “doing language” and experiential learning and share similar pedagogical functions, offering students choices and providing feedback, and fostering community of learning.

Among learner-based and psychological factors, a number of studies have indicated that self-efficacy (e.g., Barkley, 2006; Chemers, Hu, & Garcia, 2001; Chou, 2007; Coutinho & Neuman, 2008; Gahungu, 2007; Mills, Pajares, & Herron, 2007; Nevil, 2008; Wu, 2006) has a significant and positive correlation with learner’s academic performance and achievement. According to Margolis & McCabe (2006), students with a strong self-efficacy are more likely to challenge themselves with difficult tasks and said to be intrinsically motivated. Self-efficacious students will exert a high amount of effort in order to meet their commitments, and attribute failure to factors which are in their control, rather than to external factors. Self-efficacy is specific to a situation or task. Therefore, when the situation changes, it must be considered cautiously (Hodges, 2008). For example, the transition from a secondary school to a university or a change in learning method from traditional face-to-face to online learning (Taipjutorus, Hansen, & Brown, 2012) or CALL environment might affect students’ self-efficacy. They can become demotivated and overwhelmed. However, the relationships amongst self-efficacy, academic outcomes, and other variables are complex because many factors can influence these relationships (Bates & Khasawneh, 2007).

Despite L2 research on various aspects of self-efficacy, the issue of the effects of it on student learning have to date been little investigated within the CALL-mediated TBLT context, especially in Iran. Therefore, it is plausible to speculate that students’ self-efficacy play an important role in successful CALL-mediated TBLT implementation and that, if used effectively, this new teaching and learning context can enhance students’ self-efficacy. Therefore, more research is needed to understand how CALL-mediated TBLT environment might affect students’ self-efficacy.

The purpose of the study is, thus, to examine the instructional value of blending technology into a task-based instruction on self-efficacy. To achieve the goal, it will employ TBLT as an overarching pedagogical framework, with the inclusion of technology-mediated instruction as a way of providing authentic target language and thus examining how this new L2 learning environment might affect students’ self-efficacy.

Research Question

To achieve the objectives, the following research question was formulated for the present study:

RQ: Does CALL-mediated TBLT have a significant effect on students’ self-efficacy for reading?

Review of the Literature

Task-Based Language Teaching (TBLT)

The provenance of task-based approaches lies outside language learning and in more general theories of education which underline the importance of experiential or ‘hands-on’ learning (Thomas, 2013). The American philosopher of education, John Dewey, is typically identified as an influential early advocate of task-based learning (TBL) and there are strong interrelationships between his notion of problem-based learning, the value of experience, enhancing learner motivation and task-based approaches. Dewey’s (1938) philosophy of education was collaborative in outlook, emphasizing that meaning emerges from collective experience and the willingness of people to work together. Task-based approaches are therefore not new and there is thus a strong line of influence running from Dewey to Bruner (1960) through to constructivist thought (Vygotsky, 1978) and contemporary TBL.

In language learning, TBLT owes a great deal to early research by Prabhu (1987) who posited the importance of problem-solving activities and the task as a structuring principle of syllabus design in opposition to the then prevalent form of linguistic syllabus, which was organized according to the linear mastery of linguistic forms. Prabhu’s early work in India has clear lines of influence from interactionist theories in SLA theory to sociocultural and ecological approaches which also place an emphasis on learner interaction, the importance of the learning environment for supporting and scaffolding learner development and the real-world implications of the process (Thomas, 2013).

TBLT, then, evolved by placing an emphasis on interaction, cognitive processing and authentic language use through negotiation of meaning (Bygate, Skehan & Swain, 2001; Nunan, 2004). Long (1990) focused on meaning negotiation in relation to problem-solving tasks. Pica, Kanagy and Falodun (1993) similarly indicated that negotiation of meaning is related to increased levels of interactive tasks. Research on interactive tasks emphasized how they produced greater complexity and accuracy in terms of output than non-interactive tasks, which tended to focus more on fluency (Skehan & Foster, 1997). Moreover, research on task planning indicates that it improves performance in accuracy and fluency (Ortega, 1999). Other important areas of research include the use of task repetition to enhance syntactic quality and use of the target language. Research on task-based approaches, as Willis (1996) argued, emphasizes the importance of exposure to authentic input, and sustained meaningful use of the target language for aiding output and learner motivation.

Computer-Assisted Language Learning (CALL)

According to Egbert, (2005), “computer-assisted language learning (CALL) means learners learning language in any context with, through, and around computer technologies” (p. 4). CALL embraces a wide range of information and communications technology applications and approaches to teaching and learning foreign languages, from the “traditional” drill-and-practice programs that characterized CALL in the 1960s and 1970s to more recent manifestations of CALL, e.g., as used in a virtual learning environment and web-based distance learning. It also extends to the use of corpora and concordancers, interactive whiteboards (Schmid, 2009), computer-mediated communication (Lamy & Hampel, 2007), language learning in virtual worlds, and mobile-assisted language learning (Shield & Kukulska-Hulme, 2008).

Tracing the history of CALL, Warschauer (1998b) identified early concepts of computers and other devices as ‘deterministic’ transformers of education. Later, an ‘instrumental’ view saw computers as aids in support of learning and, more recently, computers are seen to be ‘embedded’ with learning environments. An ‘environment-embedded’ perspective resonates with the concept of learning ecologies (Brown, 2000; van Lier, 2004; Lafford, 2009) in which tool usage is part of

a web of relationships involving the whole learning environment, including dimensions of time, space and human interaction.

For those who maintain a deterministic or ‘tool-centric’ view, technologies may be imbued with transformative, or perhaps even oppressive, powers (Gruba & Hinkelman, 2012). When seen in a minimal, instrumental role, they can be added or removed without great effect on the educational process. However, when embedded in an educational process, tools become integral to a learning ecology in ways that foster a ‘hybridity’ in machine and human interactions (Latour, 2005) that are situated in and transformed by the context in which they take place (Lave & Wegner, 1991). The main point here is that technologies are more than tools; that is, despite an emphasis in many definitions on electronic devices such as computers, a tool-focused perspective is insufficient to account for the varied roles that technologies play in university language programs (Gruba & Hinkelman, 2012).

TBLT & CALL

According to Thomas (2013), technology can provide opportunities to transcend the limitations of the traditional classroom context. Online materials and applications can significantly enhance the types, authenticity and range of tasks that learners engage in. Moreover, through Web 2.0 technologies like blogs and wikis and other collaborative tools, learners can emphasize their creative skills, author and produce outputs for an external audience and engage in activities which underline their active rather than passive participation (Lankshear & Knobel, 2011). Technology can promote learner agency in language learning contexts, corroborating constructivist goals and marginalizing the notion that learners are merely empty vessels to be filled with knowledge poured into them by more knowledgeable instructors.

Recently, González-Lloret and Ortega (2014) addressed the need for a new conceptualization of technology-mediated TBLT, where tasks and task-based curricula acknowledge and embrace the integration of technology as not only a medium but also as an opportunity for learning by doing, providing opportunities for learners’ to improve their digital literacy and real-world technology skills. González-Lloret (2015) also stated that TBLT, and its theoretical underpinnings in task-based language learning (TBLL), are ideal approach for fully realizing the potential of technological advances to engage learners in a use of language that generates high-quality language learning with a sense of authenticity and relevance both inside and outside the language classroom. González-Lloret noted that, the innovative blend of tasks and technology, guided by TBLT and TBLL principles, can bring about unique affordances for learning by connecting students with other speakers of the language they are learning; by raising their motivation to take risks and be creative while using language to make meaning; by minimizing their fear of failure, embarrassment, or losing face; and more generally, by promoting their active engagement in learning and following a philosophy of education that promotes learning by doing.

Self-Efficacy

The term *self-efficacy* was coined by Bandura (1977b). Since then, research in this area has been steadily growing. Bandura defines self-efficacy as a personal belief in their abilities to accomplish a specific activity or task. It is a judgment of confidence about the performance (Lorsbach & Jinks, 1999). Self-efficacy is not the same as ability or motivation, but they are all strongly related (Chowdhury & Shahabuddin, 2007; Kozlowski & Salas, 2010; Vancouver & Kendall, 2006). Indeed, self-efficacy is the personal determination of one’s own ability to deal with each different task. Notably, this determination is not based entirely on actual past

experience or existing ability and skills but also on students' perceptions of their own knowledge and ability relative to the task or situation (DeTure, 2004). Self-efficacy is specific to the context of a situation and generally influenced by four main sources: enactive mastery experience, that is, hand-on experience; vicarious experiences, that is, other persons' experience; social persuasion, that is, appraisal or feedback from others; and physiological and affective states, that is, stress, emotion, mood, pain and fatigue (Hodges, 2008). Mastery experiences are considered to be the most significant source of efficacy (Bandura, 1977b). Once established, enhanced self-efficacy is generalized to other situations with the strongest effect-taking place in activities that are closest to those in which self-efficacy has been improved.

In education, self-efficacy is a key contributing factor to students' success because it influences learners' behavior and option they choose. (Pajares, 2002). Self-efficacy influences several aspects of performance that are important to learning in the terms of the effort put forth and the persistence in accomplishing a task (Zimmerman, Bandura, & Martinez-Pons, 1992). Bandura (1997b) argues that individuals develop particular beliefs about their ability to handle a specific situation. Multon, Brown and Lent (1991) specify that self-efficacy can alter students' perceptions of their learning environment. In other words, students can perceive their learning environments either positively or negatively. Students who have low self-efficacy are more likely to get low grades and give up easily when frustrated or faced with difficult tasks (Lim, 2004). Indeed, Lorschach and Jinks (1999) noted that inefficacious learners tend to put in less effort to accomplish a goal set. As a result, their chance of succeeding is less, and in consequence of their self-efficacy will become even lower.

Much research shows that students' sense of efficacy affects their academic performance in various ways. Students with a strong sense of academic self-efficacy have been proven to willingly undertake challenging tasks (Bandura & Schunk, 1981), expend greater effort (Salomon, 1984), show increased persistence in the presence of obstacles (Bandura & Schunk, 1981; Linnenbrink & Pintrich, 2002; Schunk, 1982a), show lower anxiety levels (Meece, Wigfield, & Eccles, 1990; Pintrich & DeGroot, 1990), demonstrate flexibility in the use of learning strategies (Bouffard-Bouchard, 1990; Pintrich & DeGroot, 1990), and self-regulate better than other students (Zimmerman, Bandura, & Martinez-Pons, 1992; Zimmerman & Martinez-Pons, 1990). Students with high self-efficacy also often display accurate self-evaluation of their academic performance and greater intrinsic interest in scholastic matters, and they attain higher intellectual achievement (Bouffard-Bouchard, 1990). Students with low self-efficacy, conversely, may choose to complete only uncomplicated academic tasks to which they apply minimal effort and limited persistence or they may choose to entirely avoid the completion of an academic assignment.

However, self-efficacy and persistence increase when students accomplish activities or tasks. Self-efficacy is not only a good predictor of learners' academic outcomes but efficacious learners also tend to adapt and cope well (Alivernini & Lucidi, 2011), even when they have little prior online experience (Swan, 2004). Despite that, efficacious students still may not be motivated to put forth effort if they feel that little is being learnt about the topic or what is left to learn has small value compared to what is already known (Nilsen, 2009).

In a meta-analysis of self-efficacy research published between 1977 and 1988, Multon, Brown, and Lent (1991) found a positive relationship between efficacy beliefs and academic achievement in over a decade of published research. The analyses revealed that self-efficacy accounted for approximately 14% of the variance in academic performance. Graham and Weiner's (1996) review of motivational research revealed similar results with their finding that

self-efficacy possessed a stronger relationship to performance in other academic disciplines over and above other motivational constructs.

English in Iran

In Iran's current educational context, English is predominantly considered to be the first foreign language. English is taught at different levels in the Iranian national educational system, ranging from secondary schools to institutions of higher education as well as in private language schools. It is also the language of some of the conferences in Iran. In universities, those students who study non-English Majors at BA levels study English in maximum of five credits. They study three credits of general English instruction and two credits of ESP in which the focus is on their field, related English texts and related terminology. However, the education Iranian EFL learners receive neither enables them to attain full competence in using the English language nor assists them to interact with confidence (Nahavandi & Mukundan, 2013). Of course, due to advancements in technology and the more frequent use of the Internet, satellite, and rapid growth of private language institutes in Iran, the opportunities for English language learning have greatly improved (Talebinezhad & Aliakbari, 2002). The demand in educational institutions and learning environments grow increasingly and it requires good planning and decision making to help learners and students to pursue their studies and fulfill their goals. On the other hand, due to economic, educational or political reasons, people—in their search for better work and better educational opportunities—have become increasingly mobile and have started to migrate to different English speaking countries. These reasons alongside with the other reasons such as ever-growing interest in learning English as a prestigious language encourage the people to learn it. It means that people and particularly young generations usually have some kind of positive feelings towards English. Therefore, knowing and learning English has progressively become more prestigious and more popular, particularly among high school and university students. Some Iranian researchers have examined the type of motivation and its orientation along with the attitudes of the learners towards learning English and found different results. For example, Moiiinvaziri (2008) claimed that students in her study were highly motivated in both instrumental and integrative orientations. On the other hand, studies such as Vaezi (2008) claimed that Iranian students had very high motivation and positive attitudes towards learning English and they were more instrumentally motivated. However, no studies are found in the field of CALL-Mediated TBLT and its impact on non-English major EFL students' motivation.

Recently, Zarei & Hashemipour (2015) investigate the effect of CALL/Web-based instruction on EFL learners' general and academic self-efficacy. Results revealed that CALL/Web-based instruction had a significant effect on learners' general and academic self-efficacy. The participants of the experimental group experienced significant improvements in their level of general and academic self-efficacy compared with the comparison group participants.

Methodology

Design of the Study

The research was conducted using the nonequivalent groups pretest-posttest design, which is the most commonly used quasi-experimental research design (Best & Kahn, 2006). This design is structurally quite similar to the true experimental design, but it does not employ random sampling. In nonequivalent control group design, the dependent variable is measured both before and after the treatment. The dependent variable is the students' self-efficacy towards learning

English and the independent variable is the method of teaching English using CALL-mediated TBLT.

Participants

In this study, the population were non-English major EFL undergraduate university students enrolled at Islamic Azad University, Izeh Branch, during the academic year of 2017. Through non-probability and convenience sampling, two intact freshmen classes were chosen and randomly assigned as the experimental (N = 45) and the control group (N = 38). The subjects (27 male and 56 female) were of the same educational background, range in age from 21 to 28 and have been studying English for at least six years at school. Most of the subjects were locals but some of them were from other cities who were living at dormitory. All participants were native speakers of Persian with minimum opportunity to communicate with native speakers of English.

Instruments

Two main instruments were used in the study:

Oxford Placement Test (OPT)

At the beginning of research, subjects were required to take Oxford Placement Test (OPT; Allan, 2004) to make sure that they were homogeneous with respect to their proficiency in language skills as a whole. As a proficiency test, OPT is expected to be norm-referenced and is intended to “measure global language abilities” (Brown, 2005, p. 2). The OPT (Allen, 2004) edition entails 200 questions: 100 listening and 100 English grammar questions. Indeed, the first section is a test of reading and listening skills. OPT took one hour and first part was listening which lasted in about 10 minutes. Students then had approximately 50 minutes for grammar part. In both listening and grammar parts, students should simply choose one correct box out of two boxes. According to Allan (2004), the OPT provides reliable and efficient means of placing students at the start of a course for teachers. To check the reliability of the test in Iranian context, the obtained reliability of the test, using KR-21 measure of internal consistency was 0.78.

Self-Efficacy Questionnaire

To assess students' self-efficacy perceptions, the self-efficacy subscale of the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, & McKeachie, 1991) was used. The MSLQ is based on a social-cognitive view of motivation and self-regulated learning (Pintrich, 2003). Eight items (#5, #6, #12, #15, #20, #21, #29, #31) in this scale measure students' self-efficacy for learning and performance. Students rated themselves on a 5-point Likert-type scale, from 1 (not at all true of me) to 5 (completely true of me). The participants had 8 minutes to complete this questionnaire. For scoring each scale, all responses were added up to a sum score. The range was from 8 to 56 points. Finally, a student's score was computed by dividing the sum score for each scale by the total number of items that make up the scale. In other words, a student's score was calculated by summing these eight items and then computing the mean. In MSLQ, there are some items that should be reverse-scaled. For reverse-scaled items, 1 = 5, 2 = 4, 3 = 3, 4 = 2, and 5 = 1. However, there were no reversed items in self-efficacy scale. The motive for selection of this instrument was its high index of reliability $r = 0.93$ (Pintrich et al., 1991). The Cronbach internal consistency coefficients of the scale was .89 in the self-efficacy pretest, and .84 in the self-efficacy posttest.

Data Collection Procedures

Pilot Study

Before the main study, a pilot study was conducted to check the internal consistency and reliability of the self-efficacy instrument. Therefore, it was given to 29 non-English major EFL undergraduate university students (11 = male, 18 = female) who were selected through simple random sampling so as to represent the entire sample of subjects chosen for the main study. The reliability of the test through the KR-21 indicator of reliability was calculated as 0.80, indicating that the test enjoyed a reliable measure of self-efficacy. Finally, a structured interview was developed to examine the validity of the questionnaire. The interview included eight open-ended questions, modified from the self-efficacy questionnaire, to assess students' perceptions. Nine students were randomly interviewed as a pilot test to know if any items were confusing to them. The interviews, lasted a maximum of 10 minutes, were all performed in Persian. The interviewees were informed that the interviews would be highly confidential and used for research only. The interviews were tape-recorded and fully transcribed soon afterward. The

Main Study

The study consisted of three main phases: (1) pretesting (2) instruction in CALL-mediated TBLT and (3) posttesting. After administering the OPT, both groups of students were given the self-efficacy questionnaire as a pretest in order to assess their current self-efficacy perceptions towards learning English.

At the second stage, the experimental group took part in a weekly study session in the university audio-visual center over a period of twelve-week semester (Spring 2017). During the treatment sessions, the students in the experimental group received instruction in a CALL-mediated TBLT format, following the modified framework suggested by e.g., Bygate (1994), Skehan (2011), Willis (1996, 2004), Willis & Willis (2007), Lee (2000) and Ellis (2003), while the control group received no CALL-mediated TBLT instruction but underwent only a task-based instruction on reading without the mediation of CALL.

Each weekly session involved sixty minutes of using TBLT activities integrated with multimedia and online resources, followed by fifteen minutes of debriefings in groups of three or four at the end of each session. The instructor briefly introduced different resources they could choose from (e.g., online magazines/newspaper, news podcasts/vodcasts, online glosses/dictionaries, multimedia, synchronous/asynchronous electronic communication, etc.), encouraged them to try different functions (e.g., recording, role-play, repetition), and offered assistance as necessary to solve technical problems, such as installing software. The participants chose whatever they liked to work on in each session, and how they wanted to work. They then shared their reflections at the debriefing in either English or Persian. Participants also had to submit weekly learning diaries by e-mail or social networks (e.g., Telegram and WhatsApp applications), with reflections on various aspects of their learning such as what content they learned, how they learned it, what particular software functions they used, problems or insights, self-evaluation of their progress or changes that they noticed compared with previous sessions, important events in the learning process, and inner thoughts. To investigate the longer term effects of the study, follow-up interviews were conducted with the participants.

Finally, to compare the effect of the CALL-mediated TBLT environment on students' self-efficacy before and after the intervention, the same self-efficacy questionnaire was given to both groups.

Equal variances assumed	1.143	.288	-.016	81	.988	-.00109	.07055	-.14147	.13928
Equal variance not assumed			-.016	80.601	.987	-.00109	.06913	-.13866	.13647

After implementing the thirteen-session training program, all the participants in the two groups were given the self-efficacy posttest, the same questionnaire which had been administered as the pretest before starting the training. The descriptive statistics showed that students in the experimental group obtained much higher mean scores on the self-efficacy posttest ($M = 4.3196$, $SD = .49174$) than the control group ($M = 3.4179$, $SD = .39787$).

In order to see whether the treatment given to the experimental group had statistically caused any significant change in this group and to see if the self-efficacy perceptions of the students was significantly different from that of the control group, a univariate analysis of covariance (ANCOVA) was employed, while controlling for pre-intervention scores as the covariate. Preliminary checks were also made to ensure that there was no violation of the assumptions of normality, linearity, homogeneity of variances, homogeneity of regression slopes, and reliable measurement of the covariate. As shown in Table 3, a significant effect was found for CALL-mediated TBLT ($F = 81.450$, $p = .000$, partial eta squared = .504), suggesting CALL-mediated TBLT had a positive effect on the self-efficacy perceptions of the students in the experimental group on the posttest in contrast to the students in the control group.

Table 2. Results of ANCOVA on posttest self-efficacy using pre-test as a covariate.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	16.798 ^a	2	8.399	40.851	.000	.505
Intercept	12.071	1	12.071	58.709	.000	.423
Pretest	.049	1	.049	.236	.628	.003
Groups	16.746	1	16.746	81.450	.000	.504
Error	16.448	80	.206			
Total	1300.048	83				
Corrected Total	33.246	82				

a. R Squared = .505 (Adjusted R Squared = .493)

Discussion

The findings suggest that the students' self-efficacy improved significantly as a consequence of the CALL-mediated TBLT. Based on the finding of the present study, there is a significant difference between the effects of CALL-mediated TBLT and conventional TBLT method on Iranian EFL learners' self-efficacy. This finding partially approves those of Duan, Li, Wu, and Zhang, (2001), who reported that learners showed higher self-efficacy in distance learning context. Moreover, this finding is line with that of Pan (2008), who found that computer-based language materials have the potential to improve learners' self-efficacy. In addition, the finding of the present study lends partial support to Castagnaro's (2012) findings, according to which there was a significant and positive correlation between self-efficacy and using technology in the classroom. Furthermore, the finding partially approves that of Hoffman and Spatariu (2008), who reported that in Internet-based instruction, students with higher self-efficacy perform better than students with low self-efficacy. Recently, Zarei & Hashemipour (2015) investigate the

effect of CALL/Web-based instruction on EFL learners' general and academic self-efficacy. Their findings revealed that CALL/Web-based instruction had a significant effect on learners' general and academic self-efficacy.

The findings of this study are not altogether unexpected. There may even be intuitive support for the findings. For example, the reason why CALL-mediated TBLT turned out to be more effective in this study could be explained partially by the fact that this type of learning is novel, engaging, and, accordingly, motivating to learners. It also accounts for the interactive nature of communication believed to boost learning. According to the results, it can be inferred that Iranian students will have higher self-efficacy in online contexts. These findings confirm those of Goulão (2014), who found a significant relationship between self-efficacy and academic achievement of learners in online context. The findings suggest that students' self-efficacy may have a great effect on their learning outcomes in Internet-based contexts.

Instructors can play a key role in defining and reorganizing the tasks of learning and formative assessment and providing to the student appropriate feedback, to help them overcome difficulties, enhancing their skills, not only in terms of specific content matter, but also to the use of virtual learning environments potential. For this reason, we would like to reinforce the important role that the preconditions trigger learning a course related to the acquisition and enhancement of skills by the employment of technology in conjunction with tasks and interacting in these contexts to an increased feeling of self-efficacy. This can be a facilitator of learning relationships between subjects, content and environment resulting in better performance.

Instructors can also incorporate the sources of efficacy information into the classroom by employing effective strategies such as using peers models (Alderman, 2004; Maag, 1999; Pintrich & Schunk, 2002; Schunk, 2001), capitalizing on student choice and interest (Linnenbrink & Pintrich, 2002; Pintrich & Schunk, 2002), providing frequent focused, task-specific feedback (Heward, 2000; Salend, 2001; Schunk & Zimmerman, 1998), sequencing tasks and techniques from easier to more difficult (Brown, 2001) and having students experience learning progress and success.

Educational institutions should actively trigger self-efficacy of students by offering programs that provide students with authentic tasks, requiring them to apply more frequently knowledge and skills within diverse CALL-mediated TBLT situations and environments. Hence, the authenticity level of the experience, the structure of the situation and the supervision of the students should be finely tuned to the complexity of the task and to the student's 'skill developmental level' (van Dinther, Dochy, & Segers, 2011). Such an approach could then raise the time-on-task and consequently the students' self-efficacy. Furthermore, the classroom climate should be a safe environment for students in order to learn. Of course, a rigorous approach and application of frequent self-reflection and self- and peer- assessment could add to it (Van Gennip, Segers, & Tillema, 2009). In addition, performing tasks that involve constructive conflicts or controversy within groups of students would seem to be a promising path to follow (Decuyper, Dochy, & Van den Bossche, 2010).

Conclusions

This study implemented and researched TBLT in CALL-mediated environment. It focused on the intersection of CALL and TBLT and examined their mutual contributions on students' self-efficacy for reading comprehension. In this study, the findings revealed that TBLT in conjunction with CALL enhanced significantly students' self-efficacy. With both TBLT and CALL-mediated language teaching being gradually adopted by language educators and teachers, we would envision technology and TBLT becoming part and parcel of each other due to their

elective theoretical and practical affinities (Ortega, 2009a). This rapidly growing field has sent us a positive message on the contribution that CALL can make to improve learning in TBLT and the contribution TBLT has made to improve technology-enhanced language learning. Nevertheless, to further develop the field, we need to put more effort into several emerging directions such as the construction of a comprehensive guiding framework for CALL-mediated TBLT and the exploration of different pedagogical applications and tools thereof (Lai & Li, 2011). We also need to look closely in some directions that are critical to the successful implementation of CALL-enhanced TBLT but are mostly underexplored such as learning needs analysis. In view of the wide variety of physical and virtual environments that learners might choose to occupy, the challenge is to analyze and interpret students' chosen environments rather than simply to reproduce them in the language classroom (González-Lloret & Ortega, 2014). A needs analysis, as an important component of any well-developed language curriculum and an essential component of a task-based language curriculum (Long & Crookes 1993; Long & Norris 2000), must be presented as the starting point for developing CALL-mediated TLBT, and such a needs analysis must be intended to assess not only learners' language needs but also their technology needs (González-Lloret & Ortega, 2014). Furthermore, to push the field forward, research efforts need to be "ethically responsible" (Ortega & Zyzik, 2008, p. 334) and adopt a reasonable approach while keeping an open mind to understand the benefits of technology for task performance by learners from diverse backgrounds and with varied cultural capital (Lai & Li, 2011).

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