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Task-based pedagogy in technology mediated writing**Bio data**

Preet Hiradhar is Assistant Professor at the Department of English at Lingnan University, Hong Kong. With a background in English language teaching and e-learning, her academic interests include technology-enhanced language learning, electronic portfolios, instructional design, online literacies and digital practices. She is working on a university-wide e-learning project and her forthcoming book on critical discourse analysis.

Current research

The study explores the effectiveness of the design and incorporation of technology-mediated module for writing skills, developed for English as Second Language (ESL) learners at a university in Hong Kong. Through a tailor-made technology-enhanced writing program, units catering to specific writing outcomes were designed, developed, and incorporated to help first-year university students develop a range of written communication skills. An evaluation of the effectiveness of the online task-based writing program was conducted through a one group pre-test post-test pre-experimental research design. With an enriching learning experience through reinforcement, interaction, and scaffolding, findings revealed that specifically designed technology-mediated tasks helped enhance students' writing skills required at the tertiary level.

Task design & language learning and teaching

As language educators evaluate various learning opportunities through technology-enhanced language learning, the potential links between technology and task-based language teaching (TBLT) have gained prominence in recent years. A growing awareness of the centrality of tasks in technology-mediated environments has also given rise to completely new pedagogies in second language teaching. This paper studies the efficacy of the design and incorporation of a specifically designed technology-enhanced writing program for English as Second Language (ESL) learners at the university level within a task-based pedagogic framework. With an optimal utilization of the suite of pedagogical options afforded by technology, writing tasks were designed within the framework proposed by Ellis (2003), with units following a pedagogical sequence of pre-task, main task, and post-task that involved writing for a specific purpose. Through its design, the program presented cognitive, socio-cultural, constructive opportunities for learning. As learners achieved a better degree of unity and cohesion in their writing, the noticeable enhancement in their writing skills could establish the effectiveness of a program that maximized the potential of technology through its design. The technology-mediated task-based approach proved a viable pedagogical framework in guiding the design and strengthening the overall effect of technology-mediated learning environment.

Introduction

With the ever-growing incorporation of technology in second language teaching across various educational contexts in recent years, the need for teachers to evaluate the learning opportunities through technology has been emphasized by exponents of technology-enhanced language learning. While Chappelle (2003) affirms that changes in information and communication technologies have expanded dramatically the options for English language learning and teaching, Warschauer (2007) highlights the profound effect that information technologies are having on written communication. On one hand, language educators are exploring the potential of technology with a readjustment of existing pedagogies in second language teaching. On the other, the potential links between technology and task-based language teaching (TBLT) along with a growing awareness of the centrality of tasks in technology-mediated environments, are giving rise to completely new pedagogies. The current study thus explores the reciprocal relationship between technology and TBLT (Lai and Li 2011), by evaluating the effectiveness of a technology-enhanced writing program designed within a task-based pedagogic framework for English as Second Language (ESL) learners at a university in Hong Kong.

Task-based language teaching and technology

A pedagogical cycle with TBLT at its core consists of communicative tasks that serve as basic units, where learners involved in the educative process use the target language for meaning-making. TBLT provides a suitable pedagogical framework for the selection and use of technology in language learning. As Doughty and Long (2003) explain, technology provides a natural and authentic venue for the realization of the methodological principles of TBLT. By emphasizing the concept of 'doing language' and with pedagogical functions such as authenticity in language learning, offering student choices, providing feedback, encouraging autonomy, and fostering community of learning, the fields of TBLT and language learning and technology (LLT) have the ability to symbiotically support language learning (Ortega, 2009). Thus, the TBLT approach emerges as a natural partner of technology-enhanced learning. Moreover, with regards to the non-linguistic outcomes defined in TBLT, technology provides opportunities for language learners to engage in a range of new literacy skills (Warschauer, 2004). As a result, the potential association of TBLT and technology can best be explored through the incorporation of a task-based pedagogy in a technology-mediated environment.

Technology-mediated writing program

The technology-mediated writing program of the current study was designed on the principles of the task-based language teaching. The program consisted of units with five distinct communicative functions of writing that learners used most during their academic studies. The units with specific writing outcomes, aptly titled 'Writing to Describe', 'Writing to Narrate', 'Writing to Report', 'Writing to Respond: Discuss', and 'Writing to Respond: Argue', consisted of tasks that were designed with a primary focus on 'meaning' along with need to inform, express, or infer meaning. The writing program was set up in within a technology-mediated environment using the e-learning platform WebCT Campus Edition 8 (WebCT CE8). The tasks were designed with an optimal utilization of the suite of pedagogical options afforded by the online learning management system. Web-based resources with a range of textual, auditory, and visual input were included. As each unit focused on a particular set of writing skills such as describing, narrating, reporting, discussing, or arguing, the tasks simultaneously focused on specific linguistic aspects of writing such as coherence, cohesion, accuracy, grammar, vocabulary, and language use in general. Apart from linguistic and writing skills, the technology-mediated tasks enabled the generation of non-linguistic outcomes as learners engaged in a range of digital literacy experiences. Literacy skills included planning, researching, comprehending, interacting, evaluating, and organizing and processing information at various stages of the tasks. In other words, the program was designed in a way that

required the learners to rely on their linguistic as well as non-linguistic resources in order to complete the activity of writing for a specific purpose.

Using the TBLT framework proposed by Ellis (2003), the design of each unit followed a pedagogical sequence of pre-task, main task, and post-task. The pre-task familiarized participants with the topic and assisted them with relevant lexical and topical preparation through a series of warm-up tasks. An introduction outlining the focus and aims of the unit was followed by warm-up tasks that involved reading/watching/listening to an online material; making notes from the online materials; completing controlled writing exercises based on the materials. With clearly articulated expectations of the learning outcomes of the unit, the main task consisted of sharing notes from the warm-up task in an online forum followed by with a guided online discussion; collating points from the discussion forum to put together a piece of writing based on the guided writing warm-up tasks and discussions; exchanging and peer-reviewing partner's work; incorporating the received feedback from peer and mentor, and finally, revising the written work. With a provision of feedback during and after the task performance, a post-task that built on the previous interactions and activities was also included. This consisted of a final writing for that unit, in addition to an optional free writing based on the unit, to be submitted to an electronic portfolio to be shared for views and comments by classmates. Thus, learners were involved in an educative process where the target language was used for meaning-making, through their written communicative tasks in a technology-enhanced learning mode that involved - logging onto the e-learning platform; accessing the program; reading the materials, tasks and instructions online; researching the web to search required materials; processing information by checking online dictionaries, thesaurus, or references sites; completing various writing exercises conducting peer-reviews, evaluations and giving feedback online; interacting with group members online via email or discussion or chat forums; using a word processor to type, revise, edit, proof-read tasks via a word processor; and submitting their writings to electronic portfolios. In this way, the potential technological affordances were integrated into the task-based pedagogy through the writing program.

Methodology

In order to examine the effectiveness of the task-based technology-mediated program for enhancing writing skills of ESL learners at the university level, a research in a controlled context such as an experiment was required. Without assuming the need to make a case for technology in English language teaching, the research design of the study followed Chapelle's (2003) argument that very little, if anything can be gained by conducting Computer Assisted Language Learning (CALL) versus classroom comparison studies because the genuine questions about CALL cannot be addressed through such gross comparisons. In other words, by viewing the potential of CALL in itself for the construction of better technology-based language tasks, the study adopted the one group pre-test post-test pre-experimental research design, where the task-based technology-mediated writing program was the independent variable and the pre-test and post-test scores measuring the writing skills of students were the dependent variables. The research study aimed to address two major questions:

1. Can a task-based pedagogic approach in a technology-mediated environment enhance the overall writing skills of ESL learners?
2. Can a task-based pedagogic approach in a technology-mediated environment enhance specific aspects of writing of ESL learners?

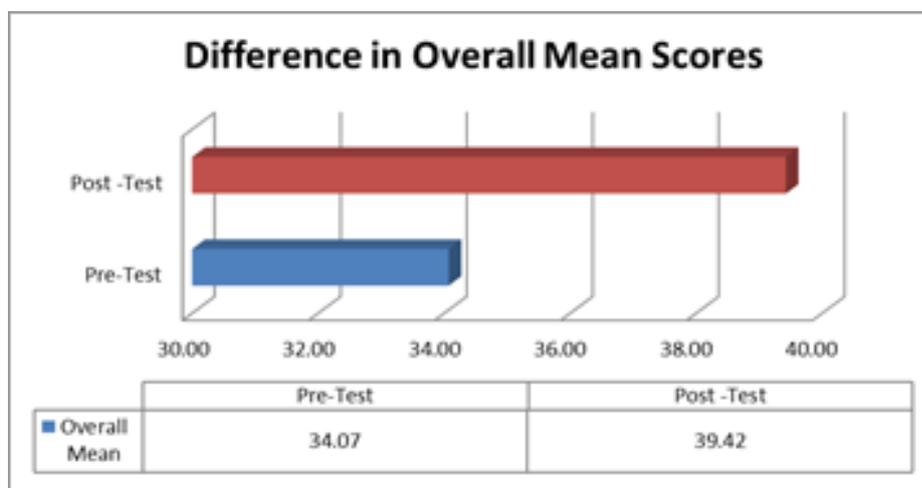
Intact groups of subjects taught by the researcher were used. To further define the group, the participants constituted first-year university students who took a required English language course, in the second term of the academic year at a university in Hong Kong. A total of 41 students participated in the study. Twenty one were females and twenty were males within the age group of eighteen to twenty three years with the average age being twenty years. Students belonged to various streams mainly classified

into Business, Arts and Social Sciences. Of these participants, twenty six participants were from the Business stream and fifteen belonged to the Arts and Social Sciences streams. All the participants were either from Hong Kong or Mainland China, so their first language was either Cantonese or Putonghua. Thus, the sample, that is, the participants for the study was controlled in terms of belonging to an intact group and having similar linguistic and educational backgrounds. Participants went through online writing program, which was divided into 5 units of 6 hours each totaling to 30 hours, during the course of the semester for over a period of ten weeks. The significant instruments of the study included the pre-test and post-test which were administered at the beginning and end of the experiment. The 50-mark tests evaluated several aspects of the writing with five major items on coherence, grammatical accuracy, unity and cohesion, vocabulary, summary writing, and response writing (expository). The responses to the objective and guided writing test items were assessed against a set mark for each, while the free writing responses were marked against a specifically designed rubric consisting of multi-levelled criteria for evaluating the varied aspects of writing such as content, organization, development of ideas and language use.

Analysis

Differences in overall pre-test and post-test scores

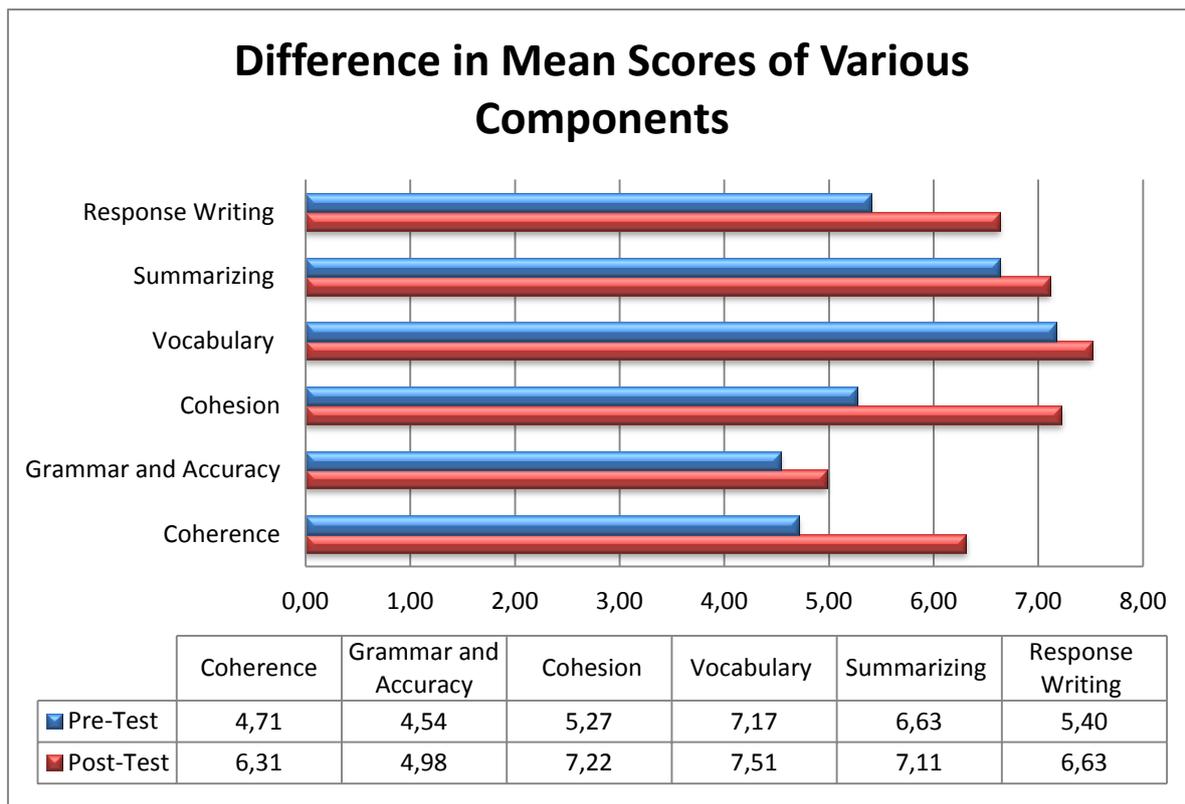
The data collected from the pre-test and post-test scores was first computed for a descriptive statistical analysis before any subsequent analysis. A correlation analysis of the test scores revealed a significant value of correlation of 0.548 with a significance of 0.000. Details collected from the test scores revealed that the overall mean of the pre-test was 34.07 and the standard deviation was 7.05. The overall mean of the post-test was 39.42 and the standard deviation was 5.07. The mean of the paired difference of 5.35366 suggested an overall 10% increase in the average score of the post-test score.



In order to obtain details of overall differences in the pre-test and post-test scores and to ascertain if the 10% increase was significant, a T-test analysis was carried out. The T-value obtained from the analysis of the overall mean scores of the pre-test and the post-test was 5.694 with a value of significance of 0.000, at the 5% level of significance. This meant that there was a significant difference in the scores pre-test and post-test scores.

Differences in Various Components of the Pre-test and Post-test Scores

In addition to the analysis of the scores for the pre-test and post-test of the study, an analysis of the various components of the tests was also carried out. Details collected for the analysis included descriptive statistics on the overall mean scores of the various aspects of writing in the pre-test and post-test, in which differences were noted.



The highest differences with values such 1.95, 1.60, and 1.23 was noted in components such as unity and cohesion, coherence, and response writing, respectively. This suggested there was an overall improvement in these aspects of writing compared to others. To ascertain the significance of the overall differences among the various components of the pre-test and post-test scores for students who took the technology-enabled writing program, an ANOVA was carried out. The F-value obtained from the analysis of the overall mean scores of the pre-test and the post-test was 4.647 with a P-value of 0.000, at the 5% level of significance. This showed that difference among the various aspects of writing in the pre-test and post-test scores was significant. Again, a post-hoc analysis was conducted through the Tamhane, Tukey HSD, and Tukey LSD tests using overall scores, gender, and stream as variables. Mean scores for the components such as unity and cohesion and coherence were found to be higher than the scores on other components at the 5% level of significance. This established that differences in the mean scores related to specific aspects of writing such as cohesion and coherence writing were significant.

Findings

While the first finding from the analysis could establish that there was a significant difference between the overall mean scores on the pre-test and post-test of the students, the second finding also revealed that there were significant differences in scores among various aspects of writing skills of the students. The findings could determine that the significant differences found were not due to chance, but due to the treatment, that is, the technology-enabled writing program. Moreover, other significant findings determined that the program was equally effective on male participants as well as female participants, and participants from various streams of study. While a significant difference was noticed in the overall enhancement of writing in general, the findings also revealed a noticeable enhancement in cohesion and coherence, in particular. This meant that the learner could achieve a better degree of cohesion and coherence with a special attention to unity and flow of ideas in their writing. While the scores on other aspects of writing such as vocabulary, grammar and accuracy, and summarizing may not have revealed significant differences, the scores on the response writing component, which

consisted of a free writing task, are noteworthy. By responding to a presented idea in the form of an exposition, the task required learners to consolidate their writing skills both, cognitively as well as constructively. The differences in the scores thus established that learners were able to associate the essential aspects of writing acquired through the task-based pedagogy. In other words, the evaluation of the results on the participants' performance through the test scores suggested that the task-based pedagogy in the technology-mediated environment was effective in enhancing writing skills of ESL learners.

Discussion

The noticeable enhancement in the writing skills of learners established the effectiveness of a program that maximized the potential of technology through its design. Studies on the use of technology in language learning have emphasized the importance of giving learners more opportunities to monitor their language production (Kitade, 2000). Through its design, the current study presented learners with the prospect of paying attention to their written language at various stages. The online forums where the learners shared their initial jottings, discussed, and collated their ideas, presented learners with opportunities to monitor their language being produced. Moreover, with the application of task-based pedagogy through technology, the program provided cognitive, socio-cultural, constructive opportunities for learning. The facilitation of cognitive skills in this study was ensured through the tasks requiring learners to research, evaluate, plan, organize, and structure their writing throughout the program. This reinforced the importance of developing advanced communication skills in the 21st century in learners (Warschauer, 2001). From the sociocultural perspective, interaction and negotiation through focused online discussions accompanied with peer-review and feedback on writing, offered opportunities for scaffolding and collaboration, which was essential to the learning process. Finally, the carefully designed tasks which focused on specific writing outcomes provided the learners with opportunities to construct their writing in a planned and organized manner. The organization in writing was reflected in test scores on items that required logical organization and appropriate sequencing of ideas as well as connecting ideas to show relationship between them through cohesion. In a way, the program enabled learners to move from a guided learning to an autonomous learning experience. By adapting the methodological principles of TBLT proposed by Doughty and Long (2003), for the a) activities (tasks as units of analysis, learning by doing), b) input (elaborate and enriched input), c) learning processes (feedback and cooperative/collaborative learning), the tasks facilitated and elaborated the overall language learning outcome, in this case, enhanced writing skills, of the learners.

Conclusion

With the feasibility of a task-based pedagogical approach for designing online courses, research regarding the effectiveness on the outcomes of the approach has been growing. The current study affirmed the need of theory-guided, principled means for design so as to maximize the potential of technology for language learning (Chapelle, 1997). With a foundation in theory and pedagogy, the task-based technology-mediated writing program of the study could prove useful in the design and implementation of future technology-enabled language programs. Language learning programs could be designed and structured around features endorsed by researchers and most importantly, features that could be easily offered by technology. Features such as easy accessibility, easy usability, a degree of autonomy, resource variety, authenticity, cognitive familiarity, sharing, interaction, and opportunities for self-improvement afforded by technology could be collectively incorporated into the design of the language program. Thus, as the potential of various technologies could be tapped in order to provide new ways of configuring and accessing language learning opportunities, a task-based pedagogical framework could prove viable for the augmenting the overall effect of technology-enhanced language learning.