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Developing Electronic Language Instructional Materials

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ABSTRACT

Application of computer technology can bring about motivation in language classrooms; therefore, the use of computer-assisted language learning is by no means deniable and it should be encouraged at all levels in a course of study. This paper attempts to draw attention to the importance of inserting computer-based and electronic materials in language learning. It starts with talking about virtual reality, simulations in language teaching, and moves on to the Psycholinguistic and sociolinguistic justifications for computer-based simulations. It then takes into consideration the multi-user, object-oriented domains, and also talks about the benefits of computer games in language learning. Language learners, teachers, and electronic materials developers may benefit from the discussions and arguments of this study.

Key words: CALL, Electronic materials, Language classrooms

Introduction

Application of computer technology, based on Maftoon, Hamidi and Sarem (2012), can bring about motivation in language classrooms; therefore, the use of CALL is by no means deniable and it should be encouraged at all levels of instruction in today's education (Montazeri & Hamidi, 2013). The research area of computer-assisted language learning (CALL) has shifted from seeing the computer as a tool or partner to seeing it as a virtual environment where learners can collaborate and interact with a wide variety of native speakers (Schwienhorst, 2002, p. 196). A critical and reflective analysis of virtual reality (VR) tools and their underlying concepts shows that learner autonomy and virtual reality are in fact an ideal combination for language learning: first, by raising language and linguistic awareness; second, by supporting interaction and collaboration with peers and native speakers; and third, by providing an experimental, learner-centered learning environment.

Virtual reality

Authorities have considered VR in terms of a totally new concept in human computer interfaces. Basically, VR is a different way of using computers. Hamit (1993) noted that the term VR was devised at the MIT in the late 1970's, to express the idea of human presence in computer-generated spaces. VR is believed to lead to higher cognitive engagement than traditional classroom learning. Central to the discussion of VR is the concept of "presence".

Biocca (1997) formulated a threefold model of presence the sense of physical presence in cyberspace. Biocca emphasized that in every virtual environment there are three bodies present: the objective body, the virtual body, and the body schema or self-image. Rose (1996) maintains that VR creates a stress-free environment. Sanchez (1996) further claimed that the virtual presence reduces the affective filter and encourages role playing, as there is less apprehension and less embarrassment. There are vital difference between interaction in VR and interaction with non-VR telecommunication systems.

Learners who have degrees of problem with the learner autonomy can benefit more from a VR environment as they are encouraged to communicate, collaborate, and participate in the learning process, where they are encouraged and sometimes even forced to take control and assume responsibility of their own learning. VR also supports the implementation of natural language processing (NLP) tools in a context of self-access and self-regulation. VR systems allow learners to actively participate in the collection and organization of their own learning resources and tools.

There are three different variations of learner autonomy. First, there is Kelly's individual-cognitive view of learning in personal construct theory. Second, there is social interactionist view of learning proposed by Vygotsky. Finally, there is learner autonomy within the experimental approach to learning. The probable benefits that Computer-mediated communication (CMC) has had as it was applied for the last two approaches to learner autonomy. VR concepts and its research share similar concerns and approaches with learner autonomy. CALL programs can support learners in becoming more autonomous language users who can select and organize their own learning resources. One of the brand new methods of using VR in language teaching is using VR to create simulations.

Simulations

Simulations have been popular in language teaching. As a matter of fact, as is stated by Jones (1984, cited in Carrier, 1991), "simulations and language are virtually inseparable..... All simulations involve a substantial amount of interaction between the participants, and interaction involves language- the spoken word, the written word, or both" (p. 224). A computer based simulation is a model for simulating reality. There are models of reality into-which some input is fed. It is expected that the input leads to some predetermined output which would guide the parties present to make better decisions on input to receive better output results (ibid).

The most important aspect of simulations, according to Carrier (1991), is the fact that they make the students face the consequences of their decisions. Such simulation scenarios as governments, foods, managerial decisions, running companies, deciding on the resources, and taking advantage of their business advantage are some of the famous ones according to Carrier.

Methodologically speaking, the objective of Computer-based Simulation (CS) should be relevant to the learners; the generation of student interaction and English fluency practice set in the context of problem-solving activity. The language used in the simulations is both functionally and structurally recorded and useful. Ultimately, CS helps learner fluency. In addition, learners are to be objective-aware as well as consciously informed on the uses and functions of the simulation activities as well as the pedagogical philosophy of theirs. In order to have effective CS, collaborative education – groups- are of vital importance.

Carrier (1991) suggests a four-phase approach to using CS exercises within FLT classrooms. The phases include: preparation for making decisions, where learners receive instructions. Furthermore, they might talk about the strategies to take and the game they have played. The next step includes learners' inputting their commands to the simulation game. At the end of this stage, the learners receive results and discuss them. Finally, students work on non-computer tasks. Teachers might proceed following up the game. Normally, learners report their teachers the process of their simulation. Students can also follow activity after they are finished doing the classroom tasks.

Psycholinguistic and sociolinguistic justifications for computer-based simulations

Psycholinguistic research in to SLA suggests that SLA may occur "when learners are provided with opportunities to actively engage in the restructuring of their interlanguage through participation in goal-based communicative activities" (Gass, cited in Peterson, 2010, 73). "These conditions can be achieved through exposure to comprehensible target language (henceforth TL) input and the production of, in particular, modified TL output obtained through interaction" (Long, cited in Peterson, 2010, 74). Further, within this body of work, conceptions of learning that emphasize the social nature of SLA processes are the focus of attention from Researchers (Lantolf, 2000).

Central to this account is the concept of mediation, the process whereby higher mental activities are developed through social interaction involving the use of tools. According to this view, language and computers can be perceived as mediating tools that enable learners to acquire language through interaction with more knowledgeable peers. (Donato & McCormick, Meskill, Cited in Peterson, 2010, p. 76)

Collaborative learning is another socio-cultural construct to Computer-Based Simulation (CBS). Network-based games further present valuable opportunities for TL socialization based on collaborative goal-based social relationships that operate outside the restrictions of institutionalized learning contexts (Thorne, 2008). In addition, the motivating nature, the apparent reduction of the affective filter, the chance of un-formal education, and the immersion in the TL in a way that would enhance learners' linguistic resources in a social context makes CBS suitable for task-based learning.

Multi-user, object-oriented domains

Multiuser object-oriented (MOO) domains represent one of the earliest applications of computer-based simulation in language learning. MOOs are simulated recreations of the real-world. The majority of this research into MOO had been carried out within the framework of tandem learning according to Schwienhorst (2002). The Schwienhorst reports on Von Der Emde, Schneider, and Kötter whose work produced promising findings in terms of the constructs mentioned earlier. However, "frequent learner interaction in MOO simulations engenders engagement, collaborative TL dialogue, and a high degree of participation".

Three-dimensional (3D) network-based simulations, as the 2nd platform for CALL, provide the chances for real time text chat and voice-based communication within theme-based simulated worlds that are user created. An influential study, conducted by Toyoda and Harrison (Cited in Schweinhorst, 2002), investigated 3D network-based simulations in CALL. This study draws attention to the need for learner training in CALL projects involving the use of simulations. In addition, this research provides evidence that learner interaction in 3D network-based simulations supports collaborative dialogue and generates the production of modified TL output.

Stand-alone commercial simulation games (SIMCOPTER), according to Schwienhorst (2002), can also be potentially valuable for language learning. Coleman (2002) reported that the goal-oriented nature of the tasks elicited the production of considerable TL output. Another positive finding was that the production of written directions appeared to raise awareness of the importance of writing accuracy. Moreover, participation in the tasks focused learner attention on the concept of audience in writing. Coleman (2002) continues by giving reports on the findings of representative samples of the research on such platforms as Stand-Alone Commercial Simulation Games (THE SIMS), massively multiplayer online role-playing games (MMORPGs), and The Tactical Language and Culture Training System (TLCTS).

The analysis conducted by Coleman (2002) indicates that the use of games and simulations in CALL is a promising research area with very promising possibilities. The researches that were examined here provide convincing evidence that gaming and simulation can "facilitate" some aspects of SLA and the development of communicative competence. The findings emphasize the importance of individual educators in supporting learning, motivating, and developing suitable material for this purpose.

Computer games and language learning

It is not much the program, more what you do with it (Jones, 1988). This quotation means the need for the teachers to actively involved in CALL activities rather than expecting the computer to do all the work. By active involvement, the Jones means the simulations which he believes are to be especially devised for the purpose of

language learning. The simulations also need to be the “right one for the right purpose” (Jordan, 1992, p. 88). Jordan then asserts the inferiority of computer-based simulations to paper-based simulations. He however discusses the three environments where computer based simulations would normally take place; a classroom, a computer room, and a self-access room. He continues to decide as which one is the best place for each and every simulation purpose.

Classrooms are best for the simulations which require a minimum input and decision through the keyboard. Computer room is the most suitable environment for simulations. Simulations that require more decisions and more keyboard work can be carried out in computer rooms. Simulations requiring a lot of input as well as some study skills are the most appropriate to be done in computer rooms. This is the most flexible environment of them all. Finally, there is the self-access room where learners can have quicker simulations with less discussions along with some study skills in this very self-access room.

Jordan (1992) continues with introducing various types of Computer-based simulations. What the author suggests is using sports simulations on the computers; the learners play the game while an on-looker notes down their language communication. He then uses these notes to give the players oral or written reports of the game. This suggestion comes from Higgins. The author believes that it is imaginative, useful, and free-time filler.

These games can be at the service of communicative fluency, according to authorities. However, the author mentions that adventure games have a “severe drawback” which is the superiority of reading and writing occurrence over speaking along with their difficulty to be solved. Jordan, however, proposes suggestions to make even adventure games more useful means of language learning. It should be mentioned that adventure games are normally of limited parsing abilities that makes the input process of theirs really weak. At the final part of his article, the Jordan discusses branching games as a kind of adventure game, including fewer decisions. This type of simulation normally includes the learners through their decisions which would change the course of the game. He introduces some of such games and states that he has developed one of such Computer-based simulations.

The Carrier (1991) suggests games of resource management. These games, according to the author, put the learners in charge of a range of resources and require them to use the resources to optimum effect. He even suggests some of such games. He even states his belief that these games are analogous to paper-based games; therefore, these games can be carried out in the classroom with the teacher's, controller's, supervision as the controller of the functional behavior. Jones (1984) introduces the functional behavior as including organizational, communicative, social, and even antisocial occasions depending on the particular occasions. Learners can then produce reports on what they have done through a chosen representative of their group(s). The final stage of such a cycle is producing written reports.

Objectives of simulations

The objective of Computer-based Simulations (CBS) is the “generation of relevant student interaction and English fluency in practice set in the context of an on-screen problem-solving activity” (Carrier, 1991, p. 228). A comprehensive language use will take place. Meanwhile, generating discussion, debate, questions and answer, decision making will be the focus in order to produce task-based language teaching. It should be mentioned that

if the objectives are not explicitly stated to the learners, they may get restless and lose interest in the task as it may seem irrelevant and useless to their overall goal of language learning (Carrier, 1991).

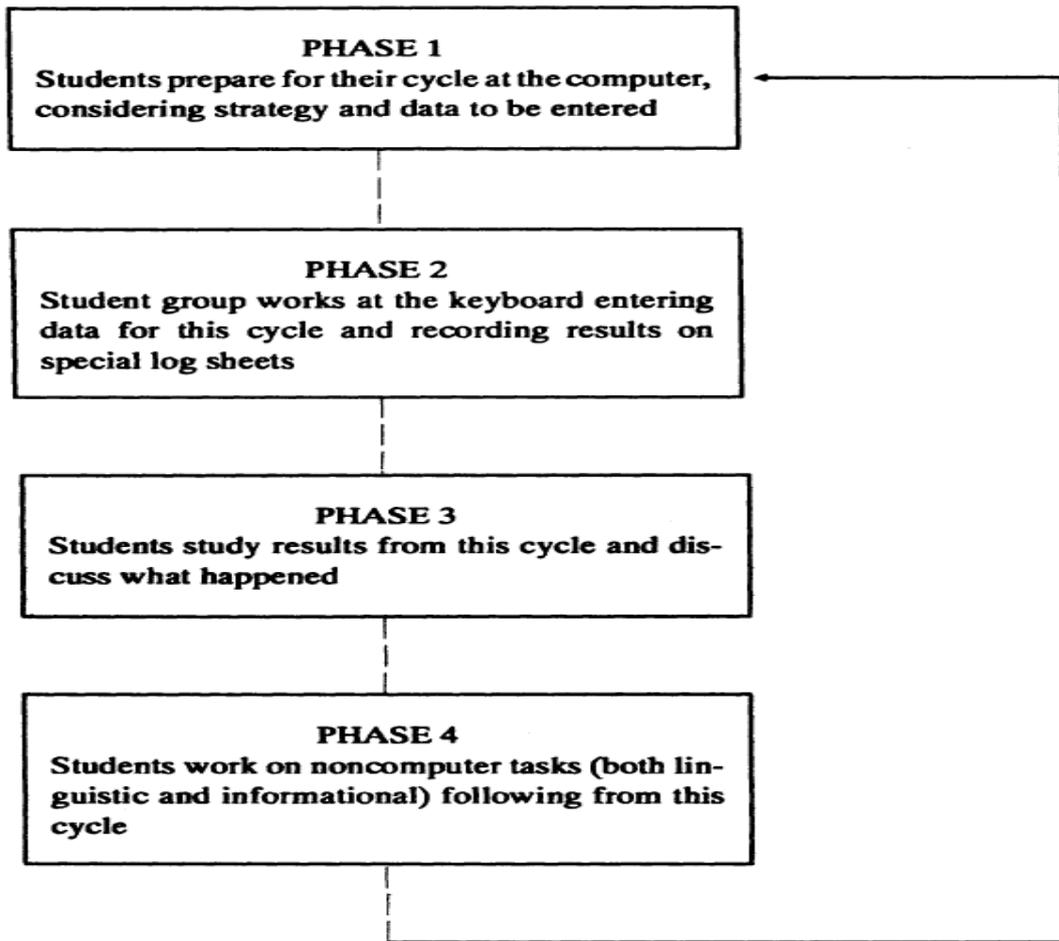
Components of the task

As stated, CBS focuses on developing learner fluency in a holistic fashion, including various components of language. The first phase, again as stated, includes keeping learners posted on the answer to the following questions:

- What they are going to do.
- Why they are going to do it.
- What they will achieve.
- How they will achieve it.
- Assignment of tasks.

Phases at each turn

Carrier (1991) suggests the following phases as the phases to be suggested to the learners to be followed in doing their task at each turn of theirs.



Carrier (1991, p. 231)

Carrier (1991) further asserts that:

Computer-based simulations work well in EFL and help develop students' confidence in fluency. The usefulness of the simulation depends much more on the methodology adopted in the classroom than on the intrinsic value of the on-screen content of the simulation itself. This is beset summed up by Chris Jone's (1986) now often repeated assertion that it's not the program; it's what you do with it. Students (and school administrators!) need to understand that computers do not help students learn, rather that teachers use computers to help students learn. Methodology, not technology, is what helps students learn. (Carrier, 1991, p. 233)

Final remarks

Computer Assisted Language Learning (CALL) is generally defined as the search for and study of computer applications in language teaching and learning. A wide range of ICT applications and approaches to teaching and learning foreign languages fall into the category of Computer Assisted Language Learning (Shahrestani & Khodareza, 2013). The use of CALL is by no means deniable and it should be encouraged at all levels of

instruction in today's education (Montazeri & Hamidi, 2013). It has been mentioned earlier in this paper that computer technology can improve learner autonomy and might change the learning strategies on the part of the learners. According to Abdolmanafi-Rokni, Hamidi and Gorgani (2014), any strategy or methodology which is capable of improving the learners' language proficiency should be taken into account. One such strategy could be application of computer technology in language learning.

Undoubtedly, in the near future, we will be more and more reliant on computers. Education would also move away from formal education to the informal education or better say "virtual education". In the world to come, digital readers will replace books, and non-interactive learning aids would become impossible. In a sense, the world of future would dictate the digital, interactive virtual reality. People will spend more time on computers and virtual world. In a sense, humans might be alienated from their current lives to run more virtual lives. Language education will finally be drawn to enter this new environment and curriculum developers are to get prepared for this new world.

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