Problems in Computer Assisted Language Learning: How to Enhance Interactivity?

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Abstract

Interactivity is one of the most important conditions of Computer Assisted Language Learning (CALL). It has exhibited numerous benefits in language learning. However, CALL is facing a lack of interactivity. This paper will address four types of problems existing in CALL, including the interaction barriers between computers and students (technical problems), between computers and teachers (design problems), between teachers and students (instruction problems), and between students and students (collaboration problems). Several solutions have been proposed: implementing computer programs with flexible correction and feedback and customizing software and web materials. Nevertheless, these strategies still have limitations: sophistication and high costs of advanced hardware and software, time commitment, and teacher and student variables. It can be a protracted process improving interaction in CALL. The problem of a lack of interactivity may not be easily overcome and may only be solved to some extent. With the rapid advancement of high technology, there could be possibility in coping with the problem of a lack of interactivity in CALL in future.

1. Introduction

Interactivity is regarded as one of the most important conditions of CALL materials. It is a process of meaning negotiation [1] and refers to two-way communication: interaction between computers and students, computers and teachers, between teachers and students, and between students and students [2]. It is necessary and significant to include interactivity in CALL as it encourages learners' motivation, improves their skills and abilities, increases language awareness, and enhances language acquisition [3]. Regretfully, current CALL is facing a lack of interactivity and various problems in terms of interaction. The problems encompass the interactions between computers and students (technical problems), between computers and teachers (design problems),between teachers and students (instruction

problems), and between students and students (collaboration problems).

2. Computer-student interaction-technical problems

One of the major barriers of interaction is communication between computers and students. A computer is mechanical and its artificial intelligence (AI) is not highly developed. Hence, it cannot "talk" or communicate like humans. Accordingly, two problems arise: first, it lacks ability in language recognition; second, it has no flexibility in error correction and feedback [4].

Self-access materials, for example, have displayed numerous shortcomings regarding lack of interactivity. Students have to revise their answers by themselves, but unfortunately, students can seldom spot their own errors. In addition, students often receive input from the computer passively without any creativity, for they have to accept the master answers. The program of the computer proceeds heedless of students' reaction and there does not seem much discourse or interaction between the computer and students [4]. Furthermore, a big problem of a computer is that it cannot teach learners speaking skills. It serves as an autonomous "tutor," isolated from students [5, p. 206].

Although the computer does not perform actively in communication with students, it has been suggested that something can be done with software to make a computer more "responsive" and reflective [2]. Wyatt [6] discussed a "chat" program at Strayer College. In this program, the computer could have a "conversation" with students in their mother tongue by requesting information from students. In turn, students taught the computer greeting words and instructed it if it did not identify the language. Similarly, a kind of software for language learning named "Visual Language Tutor" emerged to make it possible for real talk between computer and students to take place [7, p. 6]. These two versions of software will enhance the interaction between the computer and students, particularly to

some extent in easing the computer's problem of language identification.

The central concern about interaction between the computer and students is how to make the machine operation easy and flexible and bring the potential of computer into full play. It is argued that a good design of a machine should mirror "transparency of interaction," which means a good program enables students to operate in the "writing domain" such as working on texts, instead of paying close attention to "computer domain" like giving orders. It should be stressed that in language learning, the success of computer design depends on the communication between the "domain" of the machine and the "domain" of the students, which can supplement each other [5, p. 184]. What's more important, students should be offered a wide variety of choices. They may stop or interrupt the machine at any step, shift back or forth to different drills at their own speed and under their own control.

Thus, computer programs with intelligent error correction and detailed elastic feedback are strongly desired [4]. However, software alone cannot solve the problem of the lack of interactivity in CALL. It can only be realized by the application of advanced hardware and software [4]. Yet, due to the sophistication and constraint of hardware and software and their high costs, the technical problems may not be overcome easily.

3. Computer-teacher interaction-design problems

The second problem that language teachers face in CALL is what materials are appropriate and suitable for their students, including both software and Web page design problems. As compared with the adoption of ready-made software depending on authoring programs, teachers' self-designed software and web materials enable teachers to adjust the materials to learners' needs and their learning environments [5]. However, material design has posed problems as well. It requires teachers to possess sufficient knowledge about computer technology and programming which will involve considerable money and time [8]. The design of software and web materials may only be accomplished by very experienced teachers. It is not a realistic solution for many language teachers who are not proficient in computer knowledge.

3.1. Software design problems

One problem language teachers face in CALL is what materials are appropriate and suitable for their students. The interaction between computer and

teachers focuses on software design which enables software to best satisfy learners' needs. Teachers should have a good control of software so that CALL materials can really serve their purpose and benefit learners. A wealth of sources has presented two opposing propositions on the choice of CALL materials. One suggestion is to adopt ready-made software depending on authoring programs which does not require teachers to be program writers. Another suggestion is that teachers should work as program designers and write interactive programs for their students [5].

Admittedly, authoring software does not require much computer knowledge from teachers and is helpful for software production and development, but it has limitations in terms of interactivity [9]. Authoring program writers are more concerned about the commercial feasibility of software rather than its educational practicality. Thus, authoring software may not meet every learner's demands. Moreover, when feedback offered by the authoring program becomes more complicated, it exerts more difficulty on teachers to apply this software. Teachers are also required to offer hints in order to remedy every erroneous step when authoring software is used to deal with new texts. Therefore, authoring programs are highly demanding for teachers, requiring much capability, proficiency and labor. Teachers, at this point, have been partly turned into program writers [10].

Due to the deficiencies of authoring software, there are obvious advantages for teachers to design materials by themselves. Levy [5] considers that by designing software, teachers may exploit the computer fully and adjust materials to learners' tastes and their learning environments. Teachers can also provide learners with timely materials and close interaction. That is to say, materials can be flexible, efficient, and communicative.

Undoubtedly, material design has several problems. First, it requires teachers to have sufficient knowledge about computer technology and programming. Second, it involves considerable money and time [8]. Though many teachers are technically capable, they do not have enough time to design materials on their own [10]. Due to the limited financial resources, teachers may be also cautious about designing CALL materials for fear that the gain might not counteract their sacrifice of time and funds [2]. Therefore, teachers' involvement in CALL material design is not very steady and they may not be able to produce interactive software on such a tight budget.

3.2. Web material design problems

Attention is also directed to Web materials design as an alternative to the lack of interaction in current

CALL materials. This is a creative approach apart from the adoption of others' materials on the Internet. Teachers may design Web materials which contain interactive elements. The prerequisite is that teachers should possess comprehension of website creation and techniques of computer manipulation. Web materials created by teachers may well observe the need for interaction which is essential to language learning and communicative skills. Thus, Web materials can be a very useful supplement to CALL materials [11].

Nevertheless, the design of Web materials may only be accomplished by advanced and experienced teachers. It is not a realistic solution for many language teachers who are not proficient in computer knowledge. Therefore, there is still a long way to go before web materials can alleviate the problem of the lack of interactivity in CALL materials.

4. Teacher-student interaction-instruction problems

Interaction is a necessary component of language learning. It has been observed that when CALL materials are applied in language learning in the classroom, the teacher's presence and instruction significant benefit the interaction between the teacher and students [5]. Successful language learning largely depends on teachers' organization and guidance which foster learners' communication [12]. Besides being material designers and software writers as addressed in the previous section, teachers also play a central role as instructors and moderators. Unlike the interaction between the computer and students in that the computer acts as a tutor directing and teaching learners discussed in section 2, the interaction between teachers and students largely relies on the teachers' direction by controlling and using the computer as a tool. From activity planning to student training, the teachers' instruction permeates throughout the whole language learning process. However, instruction appears to be a major problem for teachers since it is highly demanding, requiring heavy workload and devotion of time [13].

Materials available through email have dramatically promoted interactivity in CALL. These new resources have considerably broadened the scope of language teaching and learning. It has been argued that this written discourse can be almost as quick as oral language [14]. The limitations of CALL materials may be solved to some degree through this medium. Emails between teachers and students have numerous advantages. On one hand, students acquire higher motivation and greater interest to engage in language tasks. On the other hand, careful teachers provide assistance for students' language by checking their

emails. Hence, interaction between teachers and students is fostered vastly [15]. As Fotos's [3] questionnaire revealed, students felt like talking with their teachers orally by sending emails. It may be suggested that mail exchange creates a communicative environment in which students apply the target language in a "meaning-focused context" interactively (p. 124). Nevertheless, email still poses latent problems, despite its optimistic side and its highest popularity among students and teachers. In order to exploit email efficiently, teachers have to learn how to effectively utilize the email system, how to select proper software, how to set suitable learning tasks and goals, and how to train learners and offer guidance. No doubt, all these processes demand enormous time and energy [5].

Additionally, according to Warschauer's [16] experiment, teachers' attitudes towards the learning process also affected instruction implementation. Teachers who thought that interactive learning and student-centeredness benefited students used computers to instill collaboration and creativity, whereas teachers who adopted teacher-centered methods fully controlled the class and met students' objection. Thus, the interaction between teachers and students does not seem to be so stable and may only be ensured to a certain degree.

5. Student-student interaction-collaboration problems

Collaboration between students and students has been regarded as interactive "learning through discussion" [13, p. 171]. In this interactive collaboration, learners' resort to discourse to talk about individual techniques to reach an agreement. Collaboration between students and their peers stimulates interest, encourages motivation, develops skills, and boosts language learning. There are two major types of collaborative interaction. One is group work at the computer. The other one can be expanded to wider distant collaborative learning [3, p. 109]. However, interaction between students and students has limitations as well.

Collaborative teamwork at the computer is reciprocal communication and it can address the problem of the isolated individuals learning at separate computers. It is an efficient way to learn language through oral discourse. Interaction and socialization can be promoted in shared aims and activities. This kind of interaction is sometimes generated by teachers, but in most cases, students take the initiative in negotiating meaning and offering each other help. Group collaboration at the computer develops learners' social and language skills. Learners participate in oral

discourse in the way they discuss problems and materials to reflect on their learning and how they should learn, so that learners can make progress together. However, human factors affect the fulfilment of collaboration. A fruitful interaction between students and students mainly relies on "willingness" to participate, "adaptability" to disagreement, and strategies to monitor collaboration [2, p. 100]. Therefore, interaction between students and students does not appear to be steady enough to ensure interactivity.

For the distant collaborative learning, take chats as an example. The advantage is that the conversation occurs synchronously and interlocutors have negotiation of views and interactive collaboration. Learners apply language in a meaningful way and gain instant feedback. Because the conversation is based on messages from each side, grammatical abilities are of great importance in this process. Thus, participants are encouraged to be more aware of their language [17]. Native speakers are also highly recommended in chatlines to guarantee an authentic and interactive environment intended for language acquisition and learning. Since chats are directly influenced by students' input and interaction, students' grammatical capabilities and skills affect the interactive process [18]. Besides, as Opp-Beckman [19] argues, affective variables also influence the fulfilment of interactivity, such as students' motivation, interests, aims, aptitudes, and working styles.

6. Conclusion

In summary, this paper has explored the problem of a lack of interactivity in CALL. It mainly deals with interaction between computers and students, between computers and teachers, between teachers and students, and between students and students, by revealing technical problems and problems also related to design, instruction, and collaboration.

The major problems in CALL are associated with hardware and software design due to their complexity, limitations, and a lack of money. Where teachers and students are concerned, the problem of a lack of interactivity is affected by teachers' expertise, attitudes, time, and effort involved and by students' strategies, technical knowledge, language capabilities, understanding of interaction, and willingness for participation. Therefore, it can be a protracted process improving interaction in CALL materials. The problem of a lack of interactivity may not be easily overcome and may only be solved to some extent. With the rapid advancement of high technology, there could be possibility in coping with the problem of a lack of interactivity in CALL in future.

7. References

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