APPLIED COMPUTER SYSTEMS
LIETIŠĶĀS DATORSISTĒMAS

COMPUTER-ASSISTED LANGUAGE LEARNING TO IMPROVE THE QUALITY OF HIGHER EDUCATION: ADVANTAGES AND DISADVANTAGES

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1. Abstract

This paper describes the advantages and disadvantages of Computer-Assisted Language Learning (CALL). Using computers in education has both advantages and disadvantages. In the last decade high technology, notably in the form of computers, has established a powerful presence in foreign and second language pedagogy. This article explores the student and teacher benefits of using CALL in English as a Second Language (ESL) class.

This article gives a thorough description of the advantages and disadvantages of CALL and explains the reasons for using CALL in teaching languages. This article will also provide some important Internet-based activities and links for the ESL classroom and describe some strategies to help ensure that the activities will keep the students' interest.

2. Introduction

CALL is presently the most innovative area in the practice of foreign or second language teaching and learning. Keeping students interested and engaged in the current topic or activity is a daily challenge for teachers in the ESL classroom. One of the advantages of CALL is that it provides new possibilities for assisting teachers to successfully meet this challenge (Goyal, 2002).

In the last few years the number of teachers using Computer-assisted Language Learning has increased significantly (Brown, 1999). Although the potential of the Internet for educational use has not been fully explored, yet and the average school still makes limited use of computers, it is obvious that we have entered a new information age in which the links

between technology and Teaching of English as a Foreign Language (TEFL) have already been established (Brown, 1999).

Computer technology is being widely used in classrooms as a means of supporting instruction. Concurrently, much attention in the education research community has focused on instructional technologies (Malhotra, 2004). The number of language teachers using Computer-assisted Language Learning has increased markedly and numerous articles have been written about the role of technology in education in the 21st century. Although the potential of the Internet for educational use has not been fully explored yet and the average school still makes limited use of computers, it is obvious that we have entered a new information age in which it is vital to use information technologies to improve the quality of teaching the foreign languages.

The development of the Internet brought about a revolution in the teachers' perspective, as the teaching tools offered through the Internet were gradually becoming more reliable. Nowadays, the Internet is gaining immense popularity in foreign language teaching and more and more educators and learners are embracing it.

Current advances in computer technology and the rapid pace of change in the communications revolution are affecting the way English Language teachers use information technology to develop pupils' language skills (Agarwal, 2001). There is now a wide range of opportunities open to classroom practitioners from creating online self-access quizzes to the use of authentic online materials as input for activities, and for promoting collaborative projects through computer-mediated communication.

Until quite recently, computer-assisted language learning was a topic of relevance mostly to those with a special interest in that area. Recently, though, computers have become so widespread in schools and their uses have expanded so dramatically that the majority of language teachers must now begin to think about the implications of computers for language learning. CALL has gone through numerous stages being influenced primarily by the dramatic developments in computer science (Richardson, 2000). What was initially available only to the few, has nowadays become widely accessible to most students.

Developments in multimedia software and the Web offer a range of new opportunities for learners to develop proficiency in the target language. Multimedia programs combine digital audio, graphics, and video with an array of meaning aids and afford a high level of individual control, while the Web makes it possible for easy access to an assortment of experiences, including exposure to an unprecedented selection of unfiltered native speaker materials. Teachers can help students practice through computerized practice activities and online testing. Research shows that by using computers, students become better problem solvers and better communicators. Over a network, using e-mail and sharing files, students have the chance to collaborate and work together with other classmates, peers, and teachers. There are a lot of advantages and disadvantages of CALL.

3. Advantages of CALL:

There are a lot of advantages of computer-assisted language learning:
- CALL can genuinely lead to autonomy, to a state in which learners exercise as much control as possible over the learning process and are as little dependent on the teacher as possible.

- Computers can present materials in various ways. Electronic blips on the screen are perceived to be more changeable, more ephemeral, and less indelible than traditional methods of learning languages.
- CALL can make students use of an online reference allowing them to consult electronic resources beyond those of grammar-check, dictionary and thesaurus.
- Computers can use various colours, type faces, and sizes of letters.
- CALL provides distance education
- Computers can present a text word by word, phrase by phrase, line by line, question by question, page by page, etc.
- Computers can scroll lines of text up the screen, or change screens on demand or after a set time.
- Computers frees students from the limitations of traditional writing tools that often inhibit and restrict writing processes
- Computers transform learning languages from a traditional passive-listening exercise to an experience of discovery, exploration, and excitement.
- Computers are flexible and untiring. Computers do not get tired and can repeat the same thing again and again without complaining. Whatever it is programmed to do, it can do over and over as often as necessary, and in whatever chunks it has been programmed to use.
- Computers can help learners create, analyze, and produce information and ideas more   easily and efficiently
- Computers can give immediate feedback, if they are programmed to do so.
- Computers can confirm that an answer is correct, give the correct answer or a hint if the answer is incorrect, etc.
- Computers can rapidly and accurately check whether two strings of characters are the same, making them useful for checking spelling or answers.
- Computers clock can be used to time the students' work, limit the amount of time allowed to read a passage or do an exercise or a set of exercises, etc.
- Learning can be individualized using computers. Students can study materials related to their individual goals and what they need or are interested in, with the appropriate difficulty level and at their own pace.
- With the help of network, teachers and students can work wherever and whenever it is needed not only in class at the fixed time and place.
- Computers can keep records accurately.
- Computers help students realize their full potential when they are empowered to contribute and collaborate as a team to accomplish their tasks more effectively.
- Teachers can keep track of individual or class scores and times.
- Computers enable students to electronically monitor the individual or group language learning process from the brainstorming phase to the final draft.
- Computers enable teachers to group messages by student name, by date received, or by project name. Assignments received can be organized electronically by any one of these categories. These types of groupings make it easier for the teacher to actually see the process which their students are using when learning languages. This process can be monitored and analyzed much more effectively and logically by the teacher who can also view and organize students or group work more easily and efficiently. The teacher can quickly retrieve student writing for future analyses and grading.

- Teachers can send assignments and announcements electronically to the group. Teachers can send one message to entire group. This can save valuable class time. With the return receipt capabilities of e-mail the teacher is able to know whether each individual student has opened and read the message. This is an important feature to help monitor the progress of the student or the group.
- Computers can calculate quickly and accurately. Teachers can get the total score, average, and standard deviation and can statistically analyze individual student and class results.
- Computers give an opportunity to shy students to have a forum for expressing themselves and asking questions. Occasionally, some students who do not like to express themselves in a group tend to do better with CALL.
- Computers can use information from floppy disks, hard disks, CD- ROM, laser disks, etc. This puts a great deal of information at the disposal of computer users.
- Students can use educational programs, games, simulations, dictionaries, etc., on the computer.
- Using multi-media materials, computers can display written text and use sounds, still pictures, and video. Students feel things are more real and more easily understood
- Computer networks are also very useful. Networks allow the teacher to quickly give all students certain information and to obtain information from the students quickly, too.

4. Disadvantages of CALL:

There are a lot of disadvantages of Computer-assisted language learning:
- Students and teachers must be computer-literate because using a computer, a user has to know what commands to give the computer and how to respond to the computer. Sometimes, available CALL software is difficult to use although it has a very good manual. No matter how simple computers and software are, students need to learn a great deal to use them.
- Computers have limitations on their memory, speed, methods of input and output, etc.
- Processing information takes time.
- Information is usually input by typing it in, so to use a computer efficiently, it is necessary to know how to type.
- In general computers can do what they are programmed to do.
- Computers need programs that were designed for them. It is necessary to have proper software for a given task. Each kind of software has its own limitations. Some software is difficult to use, and some may not be able to do exactly what the user wants it to do. If a program is not designed for a given computer, it may have some limitations that prevent the user from doing exactly what he/she wants to do.
- Computers are expensive. In addition, there is a great deal of additional equipment which is needed.
- A special classroom is also necessary, along with technicians to keep the computers working properly.
- Computers break down, and they may have technical problems.

- It is also necessary to train teachers in order to make them ready to explain the things better and use Information Technologies.

5. Language learning approaches:

There are 3 well-known approaches to teach and learn languages:
- Classical approach (Teacher + Students)
- Modern approach (Computer + Students)
- Ultramodern approach (Teacher + computer + Student)
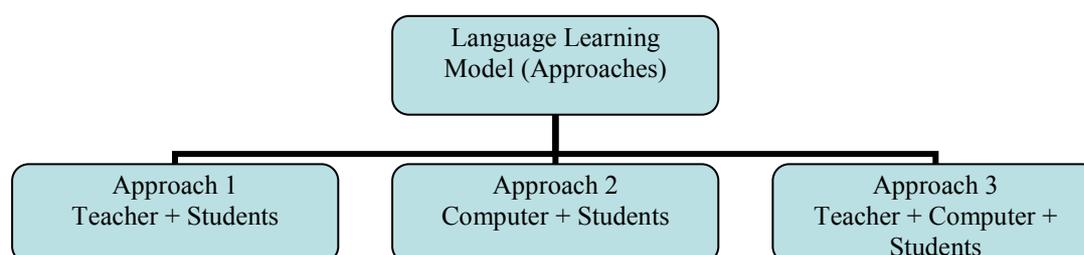
I carried out research within these studies at Information Systems Management Institute (ISMA) and Riga Business School RTU (RBS RTU) to find out which is the best approach. For this reason five English grammar topics with fifty questions each were chosen. Before testing the students, they were divided into different groups depending on their level of English knowledge.
The students were divided into the following groups with 5 students in each:
- Beginners 1 (Gnsb1)
- Beginners 2 (Gnsb2)
- Elementary (Gnse)
- Pre-Intermediate (Gnspi)
- High-Intermediate (Gnshi)
- Advanced 1 (Gnsa1)
- Advanced 2 (Gnsa2)
- Proficiency (Gnsp)

Approach 1(Teacher + students): The teacher explained the topics and the students were asked to answer 50 questions. The Students' score is shown in table1 and figure 1.

Table 1 Students' score with approach 1

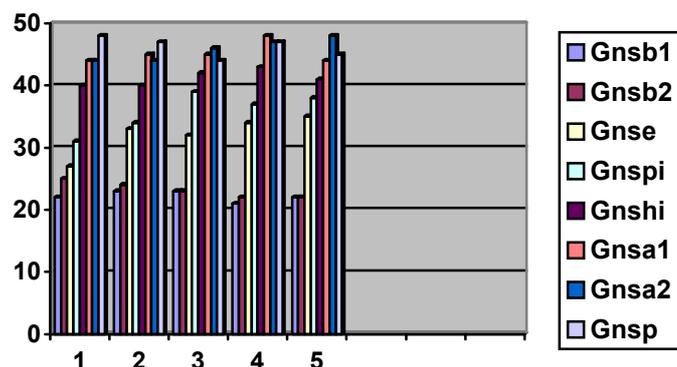| Topics	Gnsb1	Gnsb2	Gnse	Gnspi	Gnshi	Gnsa1	Gnsa2	Gnsp
1	22	25	27	31	40	44	44	48
2	23	24	33	34	40	45	44	47
3	23	23	32	39	42	45	46	44
4	21	22	34	37	43	48	47	47
5	22	22	35	38	41	44	48	45

Figure 1 Students' score with approach 1

Approach 2(Computer + students): The students were asked to learn and understand grammar explanation on www.geocities.com/kumarlatvia/test.html and asked to answer 50 online questions. Their score is shown in table 2 and figure 2.

Table 2 Students' score with approach 2

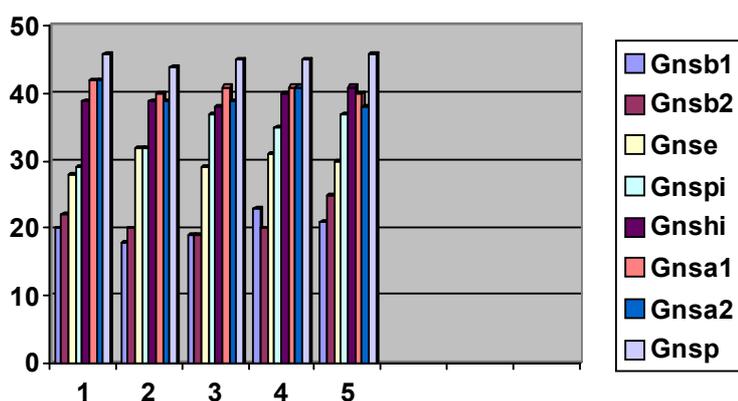| Topics	Gnsb1	Gnsb2	Gnse	Gnspi	Gnshi	Gnsa1	Gnsa2	Gnsp
1	20	22	28	29	39	42	42	46
2	18	20	32	32	39	40	39	44
3	19	19	29	37	38	41	39	45
4	23	20	31	35	40	41	41	45
5	21	25	30	37	41	40	38	46

Figure 2 Students' score with approach 2

Approach 3 (Teacher + students + computer): Within this approach the topics were explained not only by the teacher but also by a computer and later they were asked to answer 50 questions. Their score is shown in table 3 and figure 3.

Table 3 Students' score with approach 3

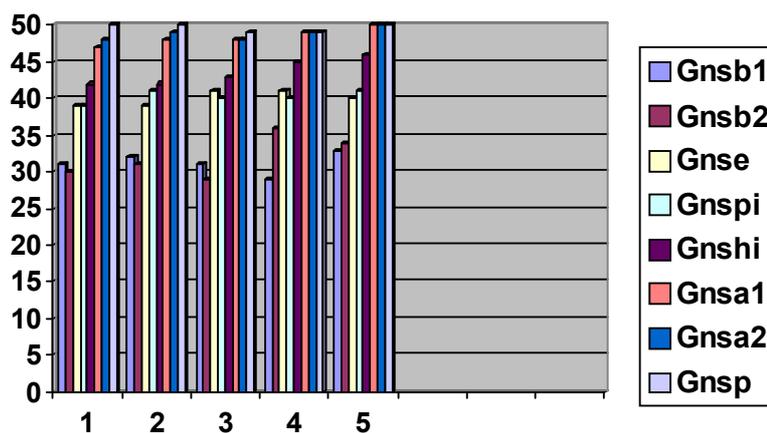| Topics	Gnsb1	Gnsb2	Gnse	Gnspi	Gnshi	Gnsa1	Gnsa2	Gnsp
1	31	30	39	39	42	47	48	50
2	32	31	39	41	42	48	49	50
3	31	29	41	40	43	48	48	49
4	29	36	41	40	45	49	49	49
5	33	34	40	41	46	50	50	50

Figure 3 Students' score with approach 3

Having analyzed the scores obtained within 3 approaches, it can be proved that the best way of learning any language is approach 3 where the topics were explained by a teacher and a computer in class and the students learned better and faster and they scored better marks in the tests.

6. How to Use a Computer in Class

It is very important to understand how computers are useful teaching languages. There are a lot of ways computers can be used in class:

1. Select target structure or function by deciding what students need to focus on considering past lessons and future goals.

2. Select computer materials to be used: Are you going to use a program, the Internet or maybe word processing? Choose just one.

3. Plan the lesson in the typical four areas: warm-up, introduction of materials, class work and summary. Divide the computer section of the lesson into at least two sections.

4. Make sure that you prepare the computer before you enter the classroom. This means loading the computer with the chosen material ahead of time.

5. When you begin to use the computer in class, remind students that more experienced computer users should be patient and help less experienced users.

6. Students who are not comfortable using computers should be placed with students who are.

7. Have students work on the first task. Communication should be encouraged, as working with a computer is a great task for conversation.

8. After task is finished, discuss specific language skills and/or objectives with students.

9. Have students work on second task and repeat the above.

10. Use the computer as a springboard for discussion. For example, ask students explain to other students what they have just read in reading comprehension.

7. Conclusion

There is no doubt that the availability of modern information technology provides not only students but also teachers with exciting possibilities for innovative outside classroom challenges in the teaching and learning of the English language. The conventional classroom-based instruction doesn't provide the students with versatile knowledge because of lack of authentic materials and time but at the same time CALL can solve all these problems.

My own experience shows that students work better and more efficiently when there is something connected with the modern technologies in the classroom. In order to make students understand their teachers and actively take part in class activities CALL is vital.

The history of CALL suggests that the computer can serve a variety of uses for language teaching. It can be a tutor who offers language drills or skill practice; a stimulus for discussion and interaction; or a tool for writing and research. With the advent of the Internet, it can also be a medium of global communication and a source of limitless authentic materials. But, the use of the computer does not constitute a method. Rather, it is a medium in which a variety of methods, approaches, and pedagogical philosophies may be implemented

8. References

[1] Goyal L., "*English Language Teaching*", G.G. Publishers, India, 2002

[2] Brown Susan, "*E-mailing in reading classroom*", Scientific Proceedings of ITI, India, 1999,
pp. 21 - 29

[3] Malhotra G, "*Modern Technologies and ELT*", Scientific Proceedings of ITI, India, 2004,
pp. 259- 272

[4] Surinder M, "*IT and Teaching*", Krishan Publishing House, India, 2002

[5] Richardson James, "*Teaching Methodology*", Scientific Proceedings of IPI, India, 2000,
pp. 38- 49

[6] CALL, 27.03.2008, Wikipedia:
http://en.wikipedia.org/wiki/Computer-assisted_language_learning,

[7] Computer assisted language learning, 27.03.2008
http://www-writing.berkeley.edu/chorus/call/index.html,

Agarwal M. K. Datoru pielietošana svešvalodu apmācībā augstākās izglītības kvalitātes uzlabošanai: priekšrocības un trūkumi
Publikācijas galvenais mērķis ir izskaidrot svešvalodu pasniedzējiem interneta tehnoloģiju un datoru lietošanas priekšrocības apmācībā klasēs. Neskatoties uz dažiem trūkumiem datora pielietošanā svešvalodu apmācības

procesā, šī metodoloģija ātri attīstas dažādu valodas līmeņu apguvē. Lai arī interneta tehnoloģiju potenciāls apmācības procesos netiek līdz galam izmantots, un skolās ne vienmēr nodrošināta brīva pieeja datoram, acīmredzams, ka ir sākusies jauna informācijas ēra, kurā informācijas tehnoloģiju pielietošana svešvalodu apmācībā ir būtiska. Publikācijā aprakstītas priekšrocības un trūkumi pielietojot datoru svešvalodu apmācības procesā. Tāpat publikācijā ir aprakstītas dažādas metodes un pieejas svešvalodu apmācībā. Autors ir veicis zinātniskos pētījumus divās augstskolās Latvijā, un, pētījumu analīzes rezultātā, sniedz savas rekomendācijas labākai metodei svešvalodu apmācībā. Tika pierādīts, ka datoru pielietošana palielina studentu un pasniedzēju darba efektivitāti. Publikācijā arī aprakstīts, kā datori klasē var tikt pielietoti.

Agarwal M. K. Computer-assisted Language Learning to improve the quality of higher education: advantages and disadvantages

The main idea of this article is to make language instructors understand the benefits of using computers and web-based teaching material in class. Although computer-assisted language learning has several drawbacks, it is fast growing methodology and has already been successfully applied at various levels of language learning. Even though the potential of the Internet for educational use has not been fully explored yet and the average school still makes limited use of computers, it is obvious that we have entered a new information age in which it is vital to use information technologies to improve the quality of teaching the foreign languages. This article explores the advantages and disadvantages of using computers in language learning process. It also shows different approaches of language learning and based on them the author carried out research at two higher educational institutions in Latvia and having analyzed the result of the research the author gives his recommendations for the best language learning method. It has been proved that the language learning and teaching with the help of computers enable students and instructors work more efficiently. The article also explains how computers can be used in class.

Agarwal M. K. Изучение языка с помощью компьютера для улучшения качества высшего образования. Приемущества и недостатки

Главная цель статьи, это обьяснение преподавателям иностранных языков выгоды использования компьютера и технологий基 основаных на ресурсах интернета на уроках. Несмотря на недостатки в изучении языка с помощью компьютера это является быстро развивающейся методикой, которая успешно внедряется в различных уровнях изучения языка.Хотя потенциал интернета для образовательных целей раскрыт не до конца и образовательные институты ограничено используют компьютер, очевидно, что мы вошли в новую информационную эру, в которой важно использование информационных технологий для улучшения качества преподавания иностраных языков.Эта статья раскрывает приемущества и недостатки использования компьютера в изучении языка.Статья также показывает разные подходы изучения языка. Автор проводил научные исследования в двух высших образовательных учереждениях в Латвии и, проанализировав результаты исследования, автор предоставляет свои рекомендации для лучшего метода изучения языка. Было доказано,что обучение с помощью компьютера способствует более эффективной работе преподавателя и студентов. Статья также обьясняет,как компьютеры могут использоваться в классе.