TEACHING LARGE CLASSES WITH WEB TECHNOLOGIES

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Abstract. This article explores benefits for teachers using CALL (Computer-assisted Language Learning) which includes teaching the English Language in large classes. This paper reports on the perceived differences between the classical way of teaching the language and the modern one, i.e. using the information technologies. 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. Learning is then transformed from a traditional passive-listening exercise to an experience of discovery, exploration, and excitement. Students can begin to realize their full potential when they are empowered to contribute and collaborate as a team to accomplish their reading and writing tasks more effectively.

Until quite recently, computer-assisted language learning (CALL) 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 homes 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 [1]. This article provides brief overview of how computers can be used for language teaching. It focuses not on a technical description of hardware and software, but rather on the pedagogical questions that teachers have considered in using computers in the classroom.

Keywords. CALL, large classes, language learning.

Short title. Teaching large classes.

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Introduction

Large classes with over 20 students are a reality in many countries and they pose particular challenges. This article suggests ways to help discipline, to use group work and to cope with limited resources. Keeping students interested and engaged in the current topic or activity is a daily challenge for teachers in the classroom. One of the advantages of the Internet is that it provides new possibilities for assisting teachers to successfully meet this challenge. Computers have been used for language teaching ever since the 1960's [1].

1. Challenges of teaching a large class

There are a lot of challenges faced by a teacher instructing large classes as it is difficult to keep good discipline going in a large class and teachers have to work with children of different ages and different abilities, wanting to learn different things at different speeds and in different ways [1]. Furthermore, teachers do not have enough time and may not have enough books or teaching and learning aids for each individual one and cannot easily give each child the individual attention they need therefore the less the attention, the less the progress.

2. Advantages of CALL

There are a lot of advantages of computer-assisted language learning as 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; as well, CALL makes students use an online reference allowing them to consult electronic resources beyond those of grammar-check, dictionary and thesaurus. Furthermore, CALL provides distance education. Within CALL, computers can present materials in various ways using various colours, fonts and letter sizes. Electronic blips on the screen are perceived to be more changeable, more ephemeral, and less indelible than traditional methods of learning languages. Computers can also present a text word-by-word, phrase-by-phrase, line-by-line, question-by-question, page-by-page, etc. and scroll lines of text up the screen, or change screens on demand or after a set time. In addition, computers frees students from the limitations of traditional writing tools that often inhibit and restrict writing processes transforming learning languages from a traditional passive-listening exercise to an experience of discovery, exploration, and excitement as computers are flexible and untiring for whatever they are programmed to do, they can do over and over again as often as necessary. Computers also help learners create, analyze, and produce information and ideas more easily and efficiently.

Using CALL, learning can be individualized as 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 and 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. Furthermore, 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 teachers 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. Teachers can quickly retrieve student writing for future analyses and grading and send assignments and announcements electronically to the group. Teachers can send one message to the entire group. This can save valuable class time. With the return receipt capabilities of e-mail teachers are 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.

3. Disadvantages of CALL

There are a lot of advantages of CALL, however, it is not applied everywhere successfully because there are several barriers that do not let it be applied in the educational programs [2]. The barriers inhibiting the practice of CALL can be classified in the following common categories.

1. Students and teachers must be computer-literate because in order to use 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.
2. Computers have limitations on their memory, speed, methods of input and output, etc.
3. Processing information takes time.
4. Information is usually input by typing it in, so to use a computer efficiently, it is necessary to know how to type.
5. In general, computers can do what they are programmed to do.
6. 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.
7. Computers are expensive. In addition, there is a great deal of additional equipment which is needed.
8. A special classroom is also necessary, along with technicians to keep the computers working properly.
9. Computers break down, and they may have technical problems.
10. It is also necessary to train teachers in order to make them ready to explain the things better and use Information Technologies.

4. CALL in a large class

It is quite obvious that a large class can be divided into several groups based on students' knowledge. In order to organize different groups based on students' knowledge of the English Language, it is necessary to define their level. For this reason, the author has created a web-site [3] which comprises a test to define students' knowledge of the English language. There are 63 questions in the test and as soon as students complete the test, they get to know about their levels, namely: Beginner, Elementary, Pre-Intermediate, Intermediate, Higher-Intermediate, Advanced and Proficiency.

In a large class, students' pairs and groups grouped according to their language level can help each other and learn from each other, so that they do not get bored listening to the teacher talk.

5. Group organization to suit the students' abilities

Approaches of Language Learning and Teaching. There are 3 well-known approaches to teach and learn languages:

1) classical approach (Teacher + Students);
2) modern approach (Computer + Students);
3) ultramodern approach (Teacher + computer + Student).

The research carried out at Information Systems Management Institute (Riga, Latvia) has proved that the best way of learning any language is approach 3 as students who have been explained the topic both by a teacher and a computer in class, learned better and faster and they scored better marks in the tests.

Group division within approach 3: teacher + computer + student. A teacher divides the class into several groups depending on the score that shows their level of the English language knowledge and takes into consideration that one group cannot comprise more than 4 students.

Therefore, there can be more than one group of students with the same level.

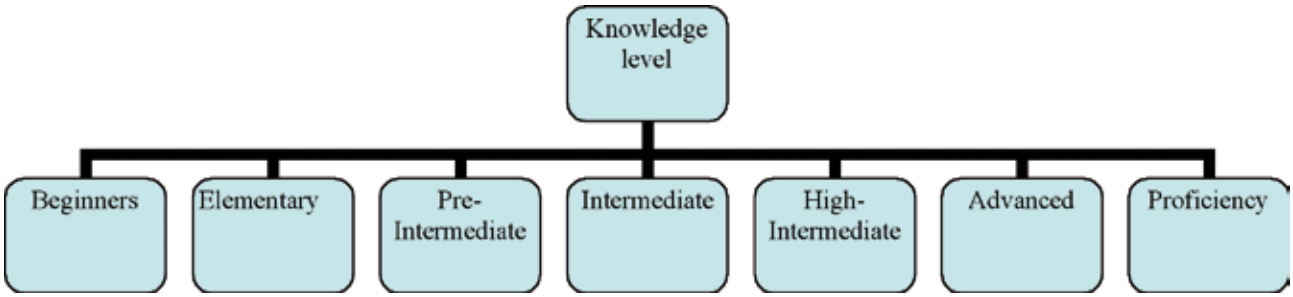

Fig.1. Knowledge-based group division.

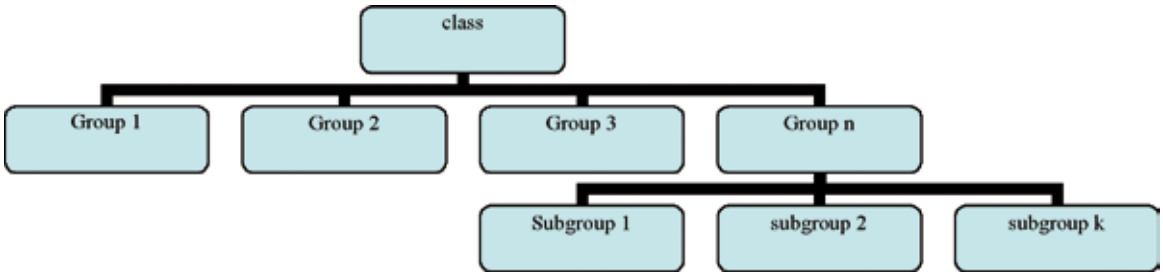

Fig.2. Division of a large class into various groups.

As a result of the above-mentioned text, we can define mathematical expectations of variables which give average expected answers of a test:

$$M(x) = X_1P_1 + X_2P_2 + \ldots + X_nP_n = \sum_{i=1}^{n} X_iP_i, \quad (1)$$

$$P_1 + P_2 + \ldots + P_i = 1, \quad (2)$$

$$M(x) = \frac{X_1P_1 + X_2P_2 + \ldots + X_nP_n}{P_1 + P_2 + \ldots + P_n} = \frac{\sum_{i=1}^{n} X_iP_i}{\sum_{i=1}^{n} P_i}. \quad (3)$$

In the above-mentioned case we have average weighed-up arithmetic value of *X*. In this case it is very simple to define the mode, i.e. the most probable value of a variable.

In order to form groups of 6 types with a maximum number of students in each one is 4, the testing has to take place. The number of groups can be defined with the following formula:

$$C_n^4 = \frac{n \cdot (n-1) \cdot (n-2) \cdot (n-3)}{4!}, \quad (4)$$

where *n* – total number of students in each group, C_n^4 - all possible combinations to form a group. The number of students left after group formation is denoted as *M*:

$$M = n - C_n^4 = n - \frac{n \cdot (n-1) \cdot (n-2) \cdot (n-3)}{4!}. \quad (5)$$

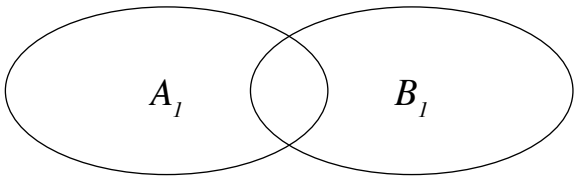

Fig.3. Acquired knowledge within various approaches.

From the remained students, let us form the number of groups with 3 students:

$$C_m^3 = \frac{m \cdot (m-1) \cdot (m-2)}{3!} \quad . \quad (6)$$

From remained students we will form the number of groups comprising 2 students:

$$C_m^2 = \frac{m \cdot (m-1)}{2!} \quad , \quad (7)$$

where

$$C_m^3 + C_m^2 \le 3 \quad . \quad (8)$$

Mathematical expressions for Acquired Knowledge model will be presented according Fig. 3 scheme.

Approach 1: A teacher + students. There are 63 questions, hence the same number of topics which are explained to students. A_i denotes explanations given by teacher; P_i - perception probability of a student after each explanation, where i=63. All information remained in a student's memory after all explanations could by express as follows:

$$Q = \sum_{i=1}^{n} A_i P_i = A_1 P_1 + A_2 P_2 + \ldots + A_{63} P_{63} \quad . \quad (9)$$

Approach 2: A computer + students. There are 63 questions, hence the same number of topics which are explained to students. B_i denotes explanations given by a computer; P_i - perception probability of a student after each explanation, where i=63. All information remained in a student's memory after all explanations could by express as follows:

$$Q = \sum_{i=1}^{n} B_i P_i = B_1 P_1 + B_2 P_2 + \ldots + B_{63} P_{63} \quad , \quad (10)$$

In case of approach 2, one or more resources can be used. R_j denotes acquired information from different resources, where n – number of resources:

$$i = \overline{1,n} \quad , \quad (11)$$

$$\sum_{i=1}^{n} R_i = R_1 + R_2 + \ldots + R_{63} \quad . \quad (12)$$

Finally, joint formula could be written as follows:

$$T = \sum_{j=1}^{n} \sum_{i=1}^{63} R_j B_i P_i =$$

$$= R_1 \sum_{i=1}^{63} B_i P_i + R_2 \sum_{i=1}^{63} B_i P_i + \ldots + R_n \sum_{i=1}^{63} B_i P_i \quad , \quad (13)$$

Using Boolean expressions, we will denote: i) full information given by a teacher and a computer as $A_i \cup B_i$; and ii) information given by a teacher and a computer at the same time as $A_i \cap B_i$. Indexes are defined as follows:

$$j = \overline{1,n} \quad , \quad (14)$$

$$i = \overline{1 \div 63} \quad . \quad (15)$$

Arithmetic data received from a teacher:

$$A_k = \frac{A_i}{A_i \cap} \quad , \quad (16)$$

$$k = \overline{1 \div 63} \quad , \quad (17)$$

$$\sum_{i=1}^{63} A_k = \frac{\sum_{i=1}^{63} A_i}{\sum_{i=1}^{63} A_i \cap B_i} \quad . \quad (18)$$

Arithmetic data received from a computer:

$$B_t = \frac{B_t}{A_i \cap} \quad , \quad (19)$$

$$t = \overline{1 \div 63} \quad , \quad (20)$$

$$\sum_{t=1}^{63} B_t = \frac{\sum_{i=1}^{63} B_i}{\sum_{i=1}^{63} A_i \cap B_i} \quad . \quad (21)$$

Then average information received from a computer and a teacher:

$$\sum_{i=1}^{63} A_i \cup B_i = \sum_{i=1}^{63} A_i \cup \sum_{i=1}^{63} B_i \quad , \quad (22)$$

$$A_i = A_k + A_i \cap B_i \quad , \quad (23)$$

$$B_i = B_t + A_i \cap B_i \quad , \quad (24)$$

$$\sum_{i=1}^{n} A_i \cup B_i =$$

$$= \sum_{k=1}^{n} \sum_{i=1}^{63} \left[A_k + A_i \cap B_i \right] \cup \sum_{t=1}^{n} \sum_{i=1}^{63} \left[B_t + A_i \cap B_i \right] \quad . \quad (25)$$

As mentioned above, teachers of large classes can organize the groups based on students' knowledge. We can distinguish 3 types of groups that can be organized:

I) same-ability groups;
II) mixed-ability groups;
III) using group leaders.

Same-ability groups. The students with the same levels can be grouped so that they will feel free working with others and teachers will not have to explain the things to everyone individually. Such kinds of groups are really very good not only for teachers but also for students as the teacher can leave the groups of faster learners to get on with the work on their own. S/he can give extra help to individual learners in the slower groups. The teacher can just come around giving some instruction or tasks to do if the group is strong and give more time to the group consisting of students with lower level of the knowledge.

Mixed-ability groups. Such kind of groups can be organized to let the students with a higher level help the ones with a lower language level. The learners with better performance in the group can help the others to master the work so that the teacher need not teach some parts. As the students work on their own, the teacher gets free time to spend for other groups.

Using group leaders. In same-ability groups and mixed-ability groups some students with a higher level can be appointed as a leader of the group so that they can help others understand the things better and faster.

As soon as a large class is divided into several small groups, a teacher can explain some topics to them and let students work in their own groups. A teacher can explain the topic with the help of computers. For instance, a teacher explains some grammar part to their students and asks them to take corresponding online tests from [4]. Research shows that students work with great pleasure on the computers and they are well-disciplined. A teacher has to just walk around from one group to another and listen to students' talk and make comments.

Conclusion

Nowadays large classes are the biggest problem faced by educational institution especially while teaching languages. Language instructors cannot work effectively and efficiently in large classes. In order to work with good results, language instructors ought to use modern technologies which can help them organize large class and their job as well. Modern information technology including internet resources provides not only students but also instructors with great possibilities for innovative outside-classroom challenges in the teaching and learning of languages. The old-fashioned classroom-based approach of instruction, where instructors do everything, should not be used any more as instructors cannot provide students with versatile knowledge because of lack of authentic materials, however, the use of Internet resources could solve these problems. Screenshot of the web page used for language learning is presented in Fig.4.

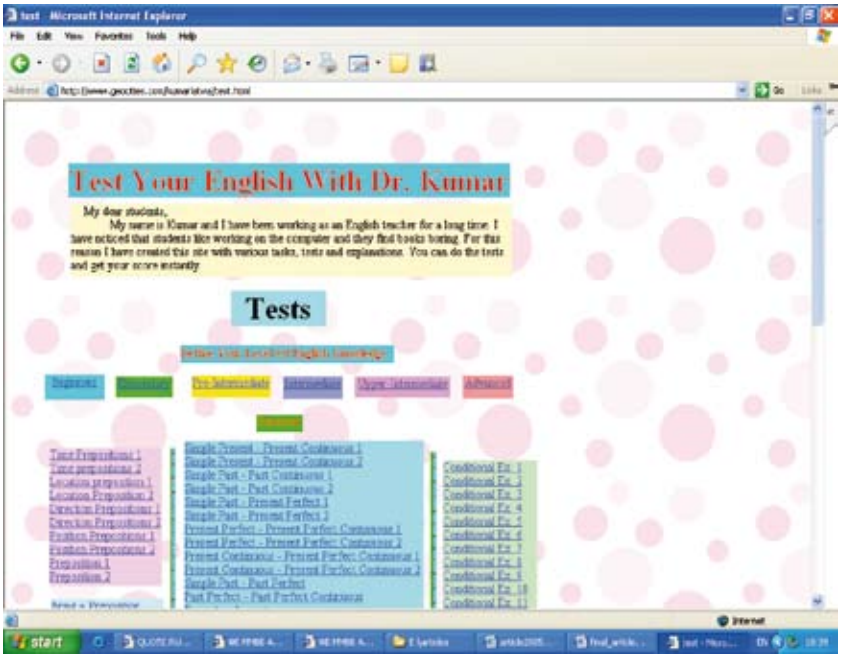

Fig.4. The screenshot of the web page used for language learning.

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