Teaching English for Special Purposes Aided by E-learning Platform

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Abstract: In today's fast moving world when students mention Google more often than going to the library, colleges and universities have to adapt to Net Generation students who have grown up with information technology and value experimental learning, working in teams and social networking. The paper presents the main guidelines of the research performed with the students learning English for Special Purposes at the university level with the object focused on finding more efficient methods of teaching and on enhanced communication. The main method used in this research was a comparative analysis of 2 groups of 35 students in each at the Faculty of Geodesy, University of Zagreb in the third semester of their studies. The results obtained in the research were analysed using SPSS (Statistical Package for Social Sciences), according to which it could be concluded that teaching can be made more efficient and the communication enhanced using information technology in teaching and learning processes, but only in combination with face-to-face teaching and learning model.

1. Introduction

Foreign language teachers began to integrate electronic communication into language teaching in the late 1980s guided by the desire to provide authentic communication partners, to make students recognize the importance of cultural exchange, and the desire to teach new learning skills to foreign language students. Later experience has shown in many cases that computer-assisted classroom discussions are great equalizers of student participation (Kern, 1995). Motivated by such experiences and the intention to motivate our students to participate with more interest in teaching and learning processes, we decided to introduce so called blended (hybrid, mixed) teaching model in the course of English for Special Purposes. The decision was encouraged by the Teaching Strategies 2007-2010 accepted by the University of

Zagreb recommending the usage of Information and Communication Technologies in the teaching activities at the tertiary level. The possibility to do so was offered after the Faculty of Geodesy had installed Moodle (Open Source Learning Management System – LMS) on its server with the intention to use it as the platform to conduct fully on-line course or to augment face-to-face courses.

This research was done with the colleagues from the Faculty of Humanities and Social Sciences, University of Zagreb. That faculty also uses Moodle and has more than 620 different on-line courses available. The Moodle system meets high standards and, in terms of programming, is a "powerful", free, open source solution written in PHP (open code using data bases MySQL and PostgreSQL) used for conducting different courses and sharing of teaching materials over the Internet. Access to the Moodle system is possible from the faculties, but also from home, dormitories, library reading rooms – any place having Internet connection. Moodle is already a well developed solution, used not only for the initial purpose of material sharing and notifying students, but also for taking exams, teacher-student and student-student interactivity, etc.

Experience of the Faculty of Humanities and Social Sciences shows high student satisfaction with the Moodle system because all the materials are available 24/7. Professors' satisfaction grows from the easy usage of exam module, especially important for the language teachers because it can be used either as an exam tool or as a practice tool. The exam module can be created using many different kinds of questions (true/false, matching, random short-answer matching, short answer, multiple choice, essay, embedded answer (close), description, calculated, numerical), different approaches (teacher can create e.g. one hundred questions and form an exam which will randomly assign ten questions to each student etc.). The security of the examination is very high since access to the Moodle system is possible only by username-password authorisation, each exam can have its own additional password, exams can be available to the students only for a limited period of time and they can also be available only from the predefined set of IP addresses (e.g. only from the computers in a specific computer room). All this guarantees very safe examination process, fast, painless, often automatic and instantaneous exam results.

For the purposes of this research, the Moodle system was used with the students who elected the subject called "Principals of English for Special Purposes" in the second semester of their studies at the Faculty of Geodesy, University of Zagreb within the frame of overall faculty pilot project opened for all teachers to participate creating their online learning sites with Moodle. Our strategic goals were to improve the quality of teaching process and the results of learning, to help potential students have better and broader access to teaching materials and to qualify them for life-long learning.

After observing the students' progress in learning English we found out that there are several issues influencing the students' effectiveness. The first one and the most powerful obstacle is *language anxiety* being intertwined with self-esteem, inhibition, and risk-taking, and playing an important affective role in foreign language acquisition. The students that learn English at the tertiary level have problems with their own feelings of incompetence and incapability to present themselves the way they would like to be. It is closely connected with the fear of being laughed at especially when having to speak in a foreign language in front of their classmates. This results almost regularly in avoiding to participate actively in classroom activities, and consequently in

complete withdrawal from all activities and in giving up to learn altogether.

The question was whether we could help our students to cope with the above mentioned problems considering the profile of our students and the problem of large groups of students participating in classroom activities. The students learning English as foreign language at the tertiary level can take English as their optional subject providing they have already acquired certain level of language abilities in their previous education. This is where the problem crops up. The initial tests intended to define the level of language competencies that the students have acquired is made with the students, but it is unfortunately very often not possible to group the students according to the level of their language competencies and organise teaching activities accordingly. We are usually faced with the problem of large groups (with the minimum of 35 students in one group) of students coming from different schools with wide range of language abilities, different needs and learning styles. Large classes are often associated with lack of student-teacher interactions, difficulty to maintain discipline, lack of control and interest, and then, lack of efficiency and effectiveness.

Finally, the students become less successful, especially those that have a problem of language anxiety that gets ever larger especially in the age in which it is very important for students not be laughed at by their peers.

The management of teaching and learning in such a situation is surely not an easy task, which initiated the idea of organising the course of English at our Faculty using a mixed model supported by ICT technology.

2. Why Moodle?

There are a lot of merits that could be mentioned when speaking about using Moodle in teaching and learning English as a foreign language. Referring to the problems mentioned above we would like to mention those that we found the most important in our efforts to solve the problems. Moodle provides a collaborative medium, a place where we can all meet and read and write. Using Moodle helps finding documents or asking questions on different forums. It is a great community for collaboration in language teaching and learning.

As a modular object-oriented dynamic learning environment, Moodle provides many very useful modules for language learning. Besides standard modules, there are more and more modules under developing and will become a standard module when they are proved to be useful and stable.

The basic modules provided by Moodle may be grouped as follows:
1. The "People" Box: Participants, Profile, Activity reports
2. Administering Your Class: Settings, Teachers, Students, Backup, Restore, Scales, Grades, Logs, Files, Help, Teacher Forum
3. Adding Content:
   (1) Adding a Resource: Compose a text page, Compose a web page, Link to a file or web site, Display a directory, Insert a label
   (2) Adding an Activity: Assignment, Chat, Choice, Forum, Glossary, Hot Potatoes Quiz, Journal, Lesson, Quiz, SCROM, Survey, Wiki, Workshop

3. First experiences with Moodle in teaching and learning English for Special Purposes

After creating participants' box and constituting a profile of our course, and

setting the basic principle of administering the class, we paid a lot of attention to the creation of activities for the students. Having in mind the fact that it was the first time that this kind of teaching and learning was offered to our students, we decided to choose easier approach, and start working on the activities that are less complicated. The role of ESP (English for Special Purposes) practitioners as teachers, course designers and material providers, collaborators, researchers and evaluators is focused on the efforts to meet specific needs of learners, making use of the underlying methodology and activities of the discipline it serves and being centred on the language (grammar, lexis, register), skills, discourse and genres appropriate to these activities. Moodle and its modules seem to be very appropriate to meet the requirements of such a role in a hybrid model of teaching. The contemporary developments in all disciplines including the one being the subject of the studies of our students require from ESP teacher to cope with rapid changes and with the need to bring new updated contents into teaching activities. Since it is possible to add a resource using Moodle modules, it was especially useful to establish a link to a file or web site offering our students new fresh material connected with the subject of their studies. It is of utmost importance to offer the students authentic learning materials, modified or unmodified in form, which is used for the simulation of communicative tasks, preparation of papers, reading, note taking, and writing. Using such contents the students are also encouraged to conduct research using a variety of different sources, including Internet. The teacher is there to guide the students and encourage them to do their own research.

However, even the most interesting material or links to interesting sites are not enough to make the students respond to the given tasks. We found Moodle activity 'Forum' to be extremely helpful first of all in triggering communication among students themselves, which could not be done during the classes due to already mentioned problems of language anxiety and different level of language competence among students. The forum called "To Learn English" was opened within the scope of our ESP-class on Moodle for the students to communicate about any topic they found interesting or intriguing, but in English. They did not start chatting with each other very enthusiastically in the beginning, and there was some encouragement needed by the teacher. The students were instructed to talk freely about any topic they want to discuss. The teacher would not participate in their discussions, just monitor the participation. Gradually, the discussion started to develop. Those who rejected totally any kind of participation in the beginning joined the discussion, intrigued by other student's opinions and willing to react. It seemed that not having to express themselves in public, i.e. in the class when everyone is listening and looking at them, helped a lot of students to forget about their fears and start using their English, no matter how good or bad it was. The situation changed in the class as well. A lot of students started to participate more freely in other activities in the class.

One of the most successful activities done with the students was glossary. It is a place on Moodle that allows participants to create and maintain a list of definitions, like a dictionary. Good dictionaries of technical terms are not always available, especially in a discipline like geodesy. Working on the creation of such a dictionary can be very inspiring, because the students know they are doing a useful job, leaving something behind that others might use sometimes in the future. At the same time it is a very good research task for students who learn foreign languages, because they are exposed a lot to authentic sources, they practice their understanding of new material and learn how to make

definitions of their own in a foreign language. The activity of creating a glossary on Moodle is an interactive module. Teachers check student's contributions but also communicate with them by sending their comments to what they have done. As long as the definitions in the glossary need improvements, there is a communication going on between teacher and students until a satisfactory solution is made. In our glossary of geodetic terms there were more than 1,000 items and their definition collected and approved to be accepted in the dictionary.

Figure 1: Example from the online glossary of geodetic terms
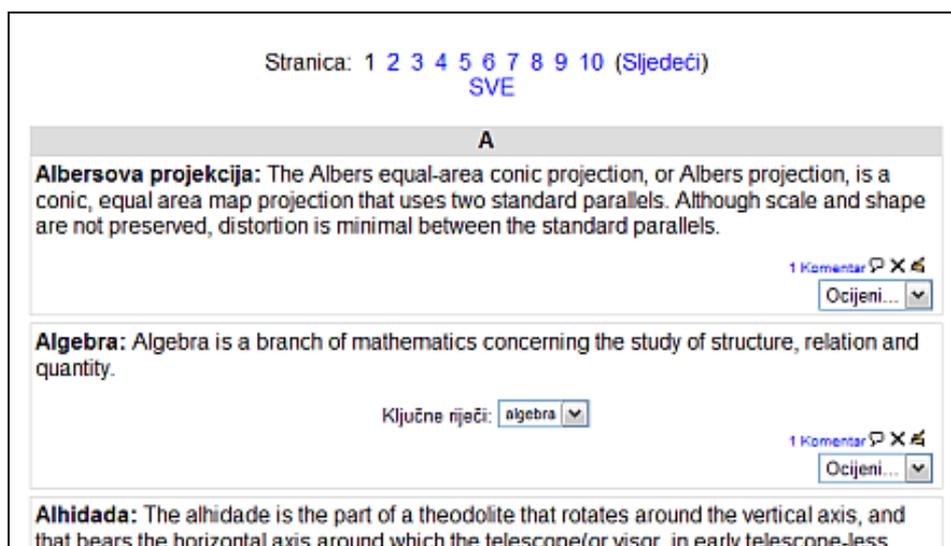
There are many kinds of quizzes available on Moodle. Our students participated in multiple choice, and true/false quizzes. They were not meant to evaluate their knowledge, but to help them practice and check for themselves how successful they were in certain activities. It was mostly used to check understanding after reading or listening to authentic material. Due to its multi-media possibilities, there was also audio-visual material offered on Moodle for the students to watch and listen. Multiple-choice quiz helped them to check their understanding. Moodle quizzes do not offer solutions to questions, but inform the participants whether their answers are correct or not. They have to look for the right answers themselves, which means repeating, watching and listening, or reading again.

All activities done on line were discussed at every session in the class. The students were given a chance to suggest what they would like to read about, and what kind of activities they would prefer to do.

4. Research

A number of researchers have suggested that electronic communication differs linguistically from both traditional written and spoken discourse (Chun 1994; Ferrara, Brunner and Whittemore 1991; Murray 1998). The results of researches done have shown that electronic discussion is similar to written texts in terms of language complexity, it can serve as and important bridge for transfer of communication skills from the written to spoken domain. No study has been done yet with the students of ESP to find out whether they might be more successful in learning English in classes supported by the advantages of ICT technology. In order to find out how successful teaching and learning can be

using combined model of teaching English for Special Purposes at the tertiary level, the research was carried out with the same students who already participated in that kind of teaching and learning model – through Moodle platform. The focus of the research was one of the Moodle activities – Wiki –being very useful collaborative tool. It was carried out at the Faculty of Geodesy with the students of the third semester.

The goal of the research was to find out whether the combined teaching model can influence the development of motivation for learning foreign language through various activities. The research itself was triggered by the assumption that the generation of students growing up with Internet should recognize in e-learning new possibilities for learning English that meet their needs, which would result in creating adequate conditions for the development of motivation to learn foreign language.

4.1. Procedure

The subject of research were two groups of students, with 35 in each group, all of them having experience in using Moodle, because they participated already in a hybrid model of teaching and learning English in the second semester of their studies. The research was conducted in the period of 30 days. It was actually the period in which students were expected to perform a certain task and within the scope of the work on this task certain variables were observed and evaluated.

The two groups got the same type of an assignment. They were supposed to make an article dealing with certain topic connected with the subject of their studies. It was a group work, because each group of 35 students was divided further into smaller groups of 8 members. These smaller groups were actually made of teams (pairs) who collected the material for the mutual article in the form of a debate. Hence, there were teams collecting the information for the topic and also the teams collecting the information against the topic.

4.2. Methods

The research was carried out on the basis of monitoring the work of students on their assignments with special attention given to the comparison of work in face-to-face and on-line environment. Namely, one group with 35 students worked on their assignments using only face-to-face mode, i.e. no ICT technology support, and the other group worked only on-line using Moodle's wiki activity. Both groups were encouraged to be as collaborative as possible in their work and to develop strong interactivity among themselves, as well as with their teacher. After completing their work and finishing the article according to the parameters given to students in advance, the students also had to present their work in front of all other students, but in such a way that every member of the group participated equally in the oral presentation. It was expected that the group using Wiki tool would be much more successful considering the assumption mentioned above and being the basic stimulation for this research.

4.3. Data analysis and processing

In order to find out whether ICT technologies could affect students' motivation for learning English and help them be more successful in their learning, it was necessary to set up adequate variables in advance that were to be observed and evaluated during the research in both groups. The Table 1 offers the presentation of these variables.

Table 1: Variables for the research

VARIABLES		ANALYSIS				
WRITTEN WORK	Written work length	short		medium		long
	Logical structure	yes		medium		no
	Usage of typical constructions	yes		medium		no
	Frequency of working	attendance				
	Duration of working	in minutes				
	Usage of references	books		magazines		Internet
COMMUNICATION	student ↔ teacher	good		medium		bad
	student ↔ student	good		medium		bad
ORAL PRESENTATION		Points (1 – 4)				
	task achievement	1		2	3	4
	vocabulary	1		2	3	4
	accuracy	1		2	3	4
	fluency, pronunciation and intonation	1		2	3	4
FINAL GRADE	2. semester – previous grade	1	2	3	4	5
	3. semester – present grade	1	2	3	4	5
ATTITUDES OF STUDENTS OBTAINED FROM QUESTIONAIRE	Online communication in English suits me better because I do not feel embarrassed by the presence of a teacher and other students	strongly disagree	partly agree	neither agree nor disagree	mostly agree	strongly agree
	Moodle could replace all other teaching models.	strongly disagree	partly agree	neither agree nor disagree	mostly agree	strongly agree
	Online communication offers better possibilities to improve only writing and understanding skills in English.	strongly disagree	partly agree	neither agree nor disagree	mostly agree	strongly agree
	Language skills can be learned better in real contact with other collocutors.	strongly disagree	partly agree	neither agree nor disagree	mostly agree	strongly agree

5. Results

The data obtained by evaluating the variables given above for both groups were processed using SPSS (*Statistical Package for Social Sciences*). The tested sample were 35 students working on their assignments face-to-face, and 35 students working on-line. The Table 2 shows the number of students in both groups considering the model of working (offline vs. online).

Table 2: Number of students in both groups

		f	%
Learning model	offline	35	50.0
	online	35	50.0
	Total	70	100.0

5.1. Comparison of the elements of the final grade for oral presentation

The final grade for oral presentation was obtained on the basis of evaluating four elements:
- task achievement
- vocabulary
- accuracy
- fluency, pronunciation and intonation

T-tests were used to test the difference between arithmetic means of the two groups. The results of the test show that the two groups differed significantly regarding task achievement and vocabulary, but there was no statistically significant difference between the two groups regarding accuracy, and fluency, pronunciation and intonation. The Graph 1 shows that the students working in wiki environment were more successful in achieving their task, and their vocabulary was better, but the accuracy, fluency, pronunciation and intonation more or less equal in both groups. It leads to the conclusion that ICT technology contributed to written communication through reading, writing and adopting new vocabulary, but oral communication was developed much better in face-to-face model of teaching and learning.

Graph 1: Achievements in single elements of oral evaluation
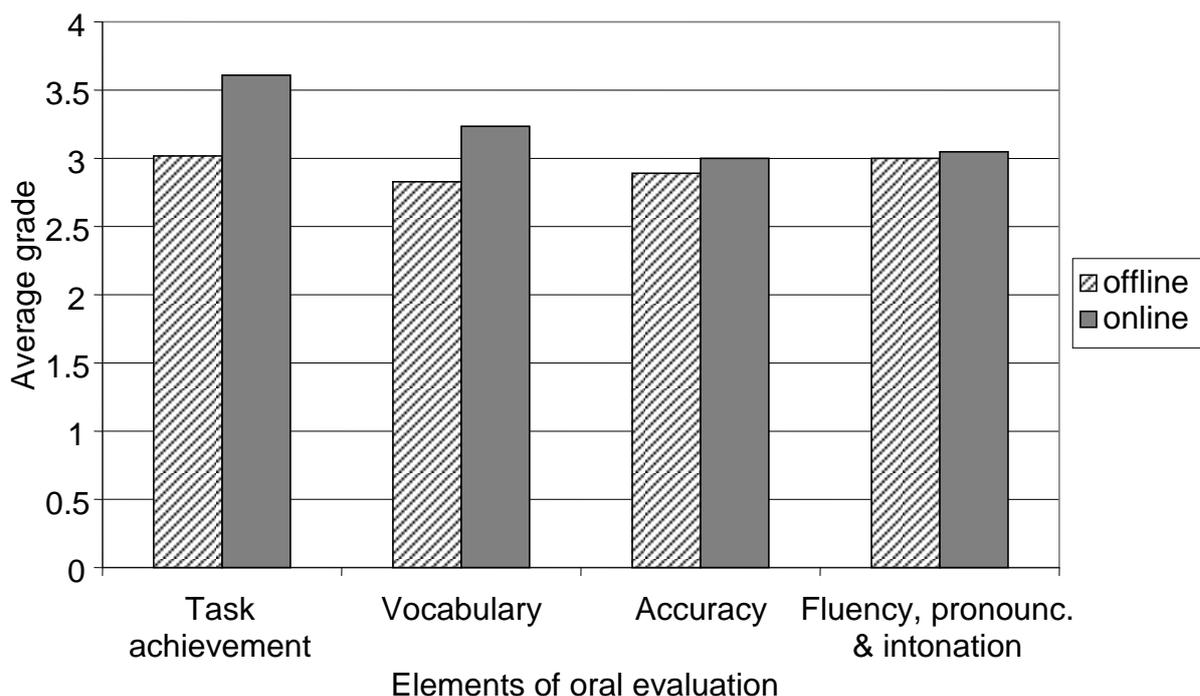
5.2. Total grade for oral presentation

Total grade for oral presentation is the sum of previously mentioned evaluation elements: task achievement, vocabulary, accuracy, fluency, pronunciation, intonation for which the students could get maximum of 4 points. Thus obtained total grade is statistically significantly different in two observed groups (Graph 2). The average number of points for each group is 11.73, i.e. 12.89 indicating that the online groups achieved better results in this part of their work.

Graph 2*:* Achievement in oral evaluation referring to learning model
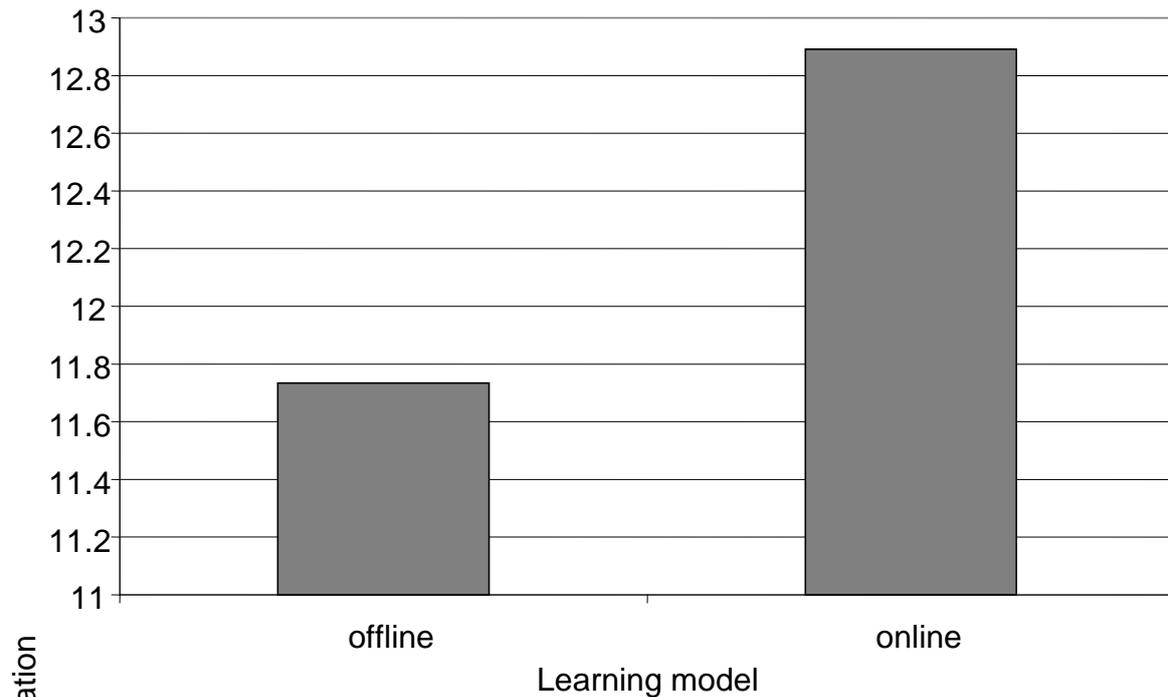
Average number of points in oral examination

Learning model

5.3. Quality of written work, time

Statistical data processing referring to the quality of written work (length, logical structure, usage of typical construction) showed insufficiently large differences between on and offline groups to make them statistically significant. Two groups indicate no large differences in the time needed to accomplish their assignments.

5.4. Influence of information sources

The influence of information sources on success in learning was also tested. Graph 3 shows the differences in using various sources of information that students could have used in preparing their assignments (book, magazine, Internet).

Graph 3: Different information sources (online vs. offline)
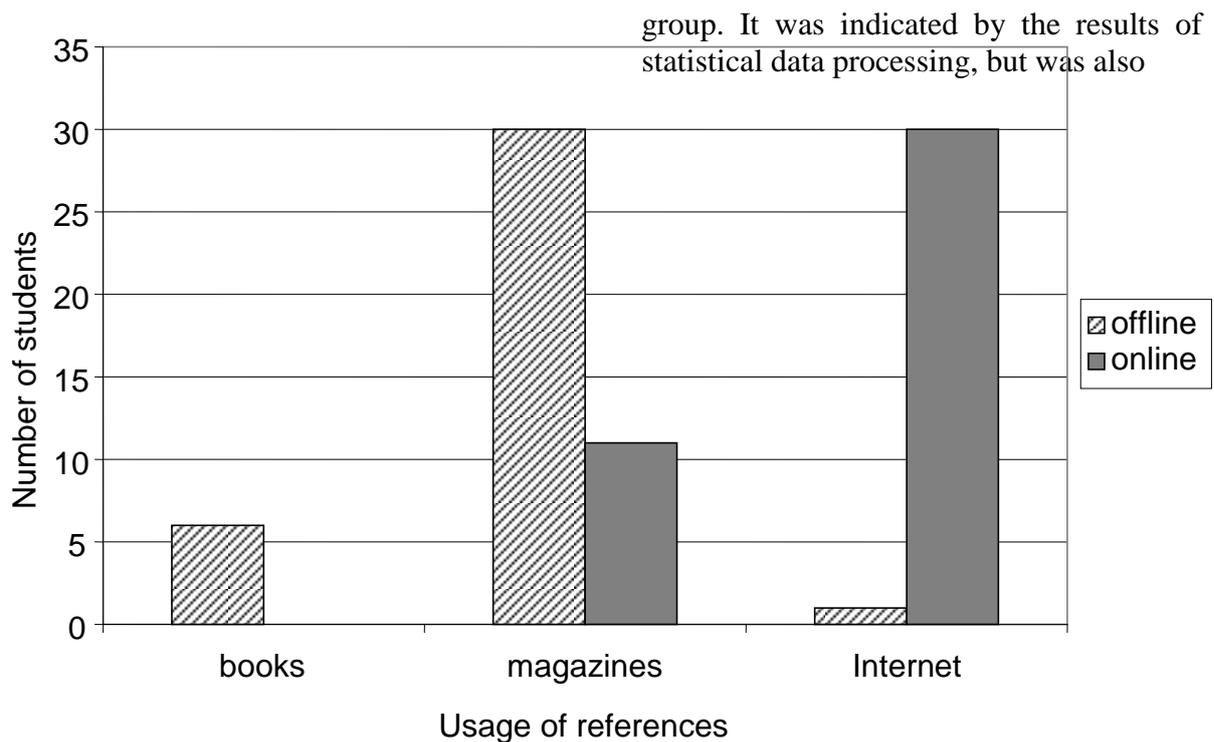
Offline group used books (6) and magazines (29), but almost no one used these references in online group. They used Internet mostly, and just a few of them used magazines. But the differences in using various information sources apparently did not have a lot influence on total grade for oral presentation and the quality of their assignments.

5.5. Communication between teacher and students, and among students

The quality of the communication between teacher and students was better in online

substantiated by the statements of some students working in online group claiming that they missed class atmosphere and the presence of the teacher in spite of the fact that they could communicate with the teacher any time they wanted in wiki environment. They were actually not supposed to contact the teacher face-to-face when working on their article, but only online. It was actually quite surprising if we remember that these students, at least the majority of them felt anxious about communicating in the class.

Graph 4: Evaluation of communication quality between students and teacher (online vs. offline)
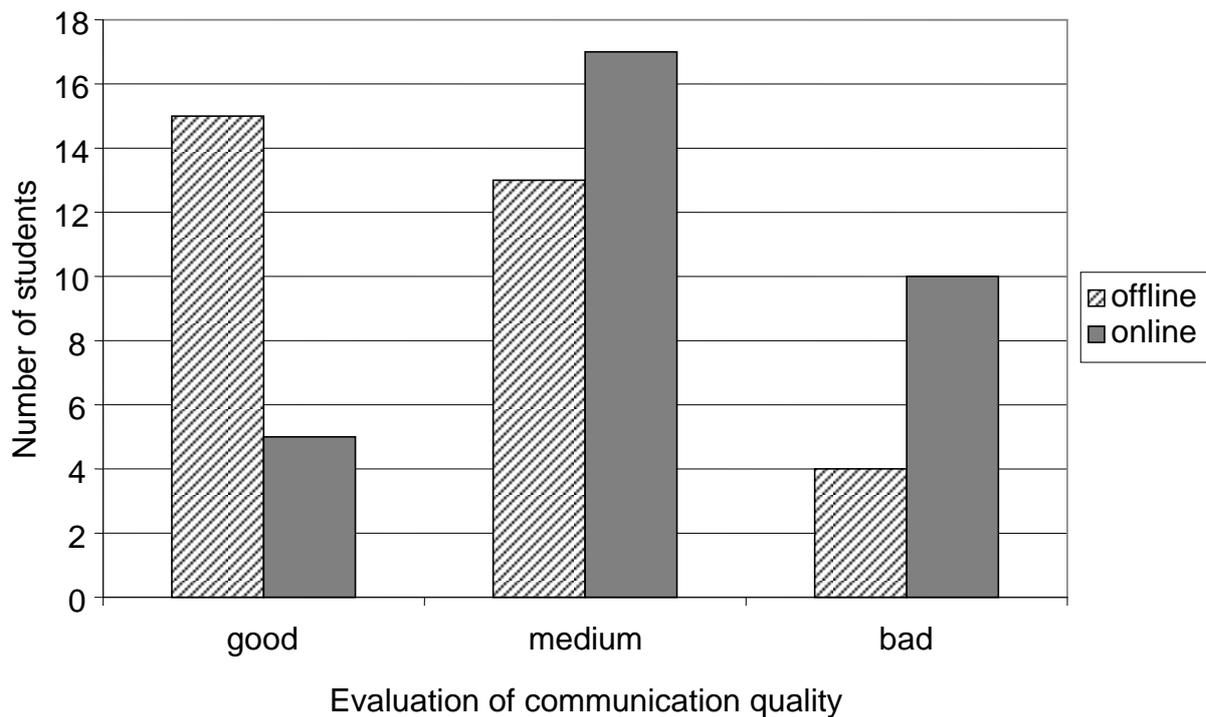
On the other hand, the quality of communication among students was almost equal in both groups. However, the occasional coming from the students working in online group suggest that they were not quite happy about not being well acquainted with some of the participants in the group work and they would have preferred meeting them, at least a few times.

5.6. Differences in final grades in two semesters.

T-test was used to analyse the differences between the arithmetic means of two groups referring to the final grade in English in the previous semester and the semester in which the research was done. It is evident that the students included into e-activity achieved somewhat better marks than the students working in offline group, but these differences are not big enough to be statistically significant.

5.7. Students' attitudes towards new models of teaching and learning English

At the end of the semester and after all assignments were finished, the attitudes of students towards new models of teaching and learning English were examined by means of a questionnaire. It consisted of scaled questions to which the respondents specified their level of agreement to a statement using five ordered response levels: strongly disagree, partly disagree, neither agree nor disagree, mostly agree, strongly agree. Referring to the level of students' agreement or disagreement, there was a statistically significant difference found between two groups with respect to their evaluation of the statement saying: "**Moodle could replace all teaching models.**" The students working on their assignments in the wiki environment agree with this statement more than the students from the other group.

Graph 5: Agreement with the statement given in the question 2

Question 2
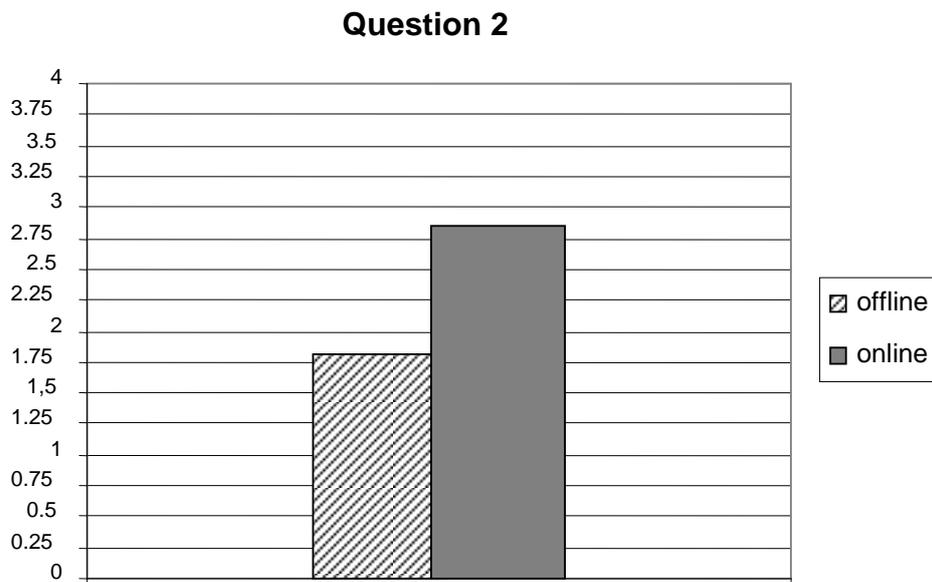
6. Conclusion

The statistical analysis of the data obtained in this research shows that the students working on their assignments using collaborative tool of Moodle – wiki achieved better results in their oral presentation. Average grades in task achievement are statistically significantly different. Online group achieved 3.61 and offline group the grade 3.01 in this element of oral presentation evaluation. Online group achieved better results in the evaluation of vocabulary obtaining the average mark 3.23 vs. the offline group obtaining 2.83. On the other hand the two groups do not differ statistically significantly in the evaluation of accuracy – online group got the average grade 3.00 and offline group 2.89, as well as in the evaluation of fluency, intonation and pronunciation – online group got the grade 3.05 and offline line group 3.0. Total average grade the students obtained for their oral presentation was statistically significantly different, with the online group obtaining 12.89 and offline group 11.73 points. The results indicate to the fact that the online group was altogether better in oral presentation, but the online

environment helped to develop **better speaking and presentation skills, and learning more new words, without having too many implications on accuracy in using English or pronunciation, fluency and intonation**. It was further found out that there were **no statistically significant differences** between the groups working online and offline in the quality **of their written works**. There was no significant difference in the length of their works ($\chi^2 = 5,750$; p>0,05), or in logical structure of the work ($\chi^2 = 0,672$; p>0,05), the usage of typical constructions ($\chi^2 = 1,853$; p>0,05). T-test showed that there was also no statistically significant difference in duration of the work on the assignments (t=-1,957; p>0,05), which means that the model of learning – online vs. offline – **does not have implications of the time spent in working**. The **sources of information had also no influence on the results** the students made in their work. The difference in using books between the two groups was statistically very significant ($\chi^2 = 6,621$; p<0,05), as well as the difference in using magazines ($\chi^2 = 52,614$;

p<0,05), and Internet (χ^2= 52,614; p<0,05). Offline group used much books and especially magazines than the online group which used only Internet, and just a little bit of magazines. Being an easy and quick way of obtaining information and getting exposed to authentic language, Internet does help students to achieve their tasks more easily and to enrich their vocabulary more that using books or magazines. It seems they find it more motivating to use Internet as their main source of information. It was expected they the students would develop very good communication with the teacher, as well as among themselves working online, because there would be no uncomfortable feelings that are connected with the presence of the teacher and other students, and no fear of being criticized or laughed at openly. But the results of the statistical analysis proved that the **communication with the teacher** was better face-to-face, 15 students were estimated to have good communication with the teacher in offline group, and only 5 students had good communication in online group. Even 10 students had bad communication with the teacher in online group, and only 4 students in offline group. On the other hand the **communication among students** was almost equal in both groups (χ^2=0,672; p>0,05). It only indicates to the fact that both ways of communication – online and face-to-face should be encouraged to introduce more diversity and dynamics in teaching and learning processes. In spite of all that, the results of the questionnaire at the end showed **positive attitude** of students towards the usage of e-activities and new models of teaching and learning English.

The students working **online** on their tasks have achieved better results in **oral presentation, especially in organisation of the report and in the application of new vocabulary.** The students working offline on their tasks have been more successful in **developing communication activities with their teacher, but also among themselves.**

In summary, Moodle is a great tool for English teachers as: (1) A platform to save and achieve teaching material easily; (2) A collaborative online platform for teachers and students to learn together. Besides creating courses, it is also very useful to join the online communities to keep yourself updated with the world and to know a circle of scholars that will truly encircle the globe.

Warschauer and Meskill suggest that the key to successful use of technology in language teaching lies not in hardware or software but in "humanware" (Warschauer & Meskill, 2000). Moodle system does not promote learning or teaching on its own. Its effectiveness lies in the way of your participation and interaction to experience and feel that you are among like-minded people who share the same curiosities, needs and interests. As the rapidly growing interest in Moodle within the e-learning community around the world, it would be unwise to ignore its likely impact, but it should also be pointed out, as shown in this research, that it should be used in a hybrid model of teaching and learning foreign languages. Face-to-face teaching model should not be neglected, but used hand in hand with other models.

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