

E-LEARNING IN EFL METHODOLOGY EDUCATION: EVALUATION OF LEARNING PERFORMANCE

Ivana Cimermanová

Prešov University in Prešov, Prešov, Slovakia

E-mail: ivana.cimermanova@unipo.sk

Abstract

Distance learning is a phenomenon used in education for many years. E-learning offers a platform that can be very effective, simple to be modified and updated. In addition, it is becoming easier to be administered and more rich and wide in the variety of tools and possibilities. The present study focuses on using e-learning forms in teaching adult students as an alternative to on-campus (face-to-face) programme. It describes not only the results of an experiment run at the university, but also tries to outline several problems that authors of the e-courses face even in case they are skilled, professional experienced textbook writers.

The quantitative results of the experiment described in the study created the basis for the comparison of two groups of young adult university students and their verbal responses enabled us to quantitatively evaluate the result of using e-course with the group that is used to take part in face-to-face educational programs.

Key words: design, e-course, face-to-face, on-campus, research, test.

Introduction

The origins of distance education date back to the nineteenth century starting with the traditional mail and printed materials, followed by using television, video, etc. The rapid development of technology and its penetration to the educational environment and process during the 21st century led to significant changes in the possibilities to apply distance education in formal education or as a support to face-to-face lessons.

The basic definition or characteristics of online education defines that it “comprises all forms of electronically supported learning and teaching. The Information and communication systems, whether networked or not, serve as specific media to implement the learning process.” (Tavangarian, Leypold, Nölting, & Röser, 2004, p. 274).

E-learning is characterized by the “absence of physical presence.” Thus, learners must be given a very clear “guide” what the expected outcomes of the course are, what the expectations and duties are, lists of teaching materials (or links where to access it), reference material, etc. The guide (tutorial) how to get oriented in a course (especially if the students take part for the first time in a particular e-system) could be a part of a course (simply added document for users; it can also be sent to students.) The material must be self-instructive, as learners are expected to be autonomous and independent. It is very important to realize that the quality of any course depends much on the quality of materials and on the ability of the tutor to communicate via e-devices. Moreover, the success of the course depends highly on the ability of the course designer to use appropriate methodology to motivate learners and keep them active in the learning process, as well as to evoke the feeling of their responsibility for their own learning progress. The tutor should be autonomous, self-disciplined, and deadline-keeper, The transformation of the face-to-face courses to their “online alternatives” is a long and not easy process, where the

key information must be elicited and abstracted, and the correct presentation of new material sequenced in the steps alternated with motivation and control questions that keep the students motivated and challenge them to search further information should be carefully selected.

Problem of Research

A lot has been discussed about the efficacy of distance education. Most researches brought positive results about this method, indicating that performance of both groups of students (on-campus and distant learning) are not significantly different, and that e-learning is accepted as possible alternative method (see Chou & Liu, 2005; Tselios, Daskalakis, & Papadopoulou, 2011; Park, 2009). There are also disputes about the applicability of distance method in teaching all subjects (especially practice-oriented courses) and teachers remain somehow sceptical of distance education. Distance education in the form of e-learning has been introduced in Slovakia widely, but unsystematically and, in many cases, intuitively and the courses are created by the teachers without prior knowledge of principles and strategies of how to use e-course designs. These statements cannot be however generalized, while the systematic preparation or courses on methodology of on-line courses are not an obligatory part of teacher-training courses or e-course designers.

The author has experience with e-education as a learner from various periods of time (starting in the late 90s of previous century and the last one in 2011 mostly oriented to using ICT in teaching English as a foreign language and methodology on running e-courses. Those courses were realized using different platforms, starting with a course based on e-mail correspondence and ftp transfers up to the courses run in LMS (learning management systems), using multimedia interactive application. Thus, the author reached theoretical knowledge and experience with e-education that she could transfer to her own courses. The author has several years of experience with CALL (Computer Assisted Language Learning) and running e-courses that were realized in the form of blended learning.

Research Focus

As it has been already mentioned, there have been several published studies confirming that there is no significant difference between the on-campus students and e-students in terms of their after-course performance. There were also studies that attempted to find out more about the factors affecting (language) learning process, such as, learner style, intelligence types, age, and its relation in terms of students' e-course performance.

The aim of the present study was to investigate whether learners from teacher-training programmes can perform equally irrespective of the way of training (online or face-to-face) in terms of e-course methodology. The idea of conducting such research was based on the assumption that it could be better to follow only online training as a way to lower the cost for both sides – institution and students. In addition, such online training could offer the opportunity to complete such a study to those learners who face problems to regularly attend face-to-face instruction, since they have to daily commute to the training site (school, university etc.).

The hypothesis was formulated about no significant difference between the effects of the face-to-face programme compared to a virtual course provided that the materials and course management apply didactic and methodological principles of teaching, such as, respecting learners and their needs, introducing motivational phase and summarising block, adequate sources are relevant and available are recommended and used.

Methodology of Research

General Background of Research

The research was conducted at Prešov University in Prešov. The TEFL (Teaching English as a Foreign Language) methodology course is a 3-semester compulsory course for pre-service teacher trainers of English language and literature. The experiment itself lasted for one semester and was realised in two groups, where one group had traditional on-campus lessons and the second one worked in LMS Moodle with the multimedia support (CD with material). The multimedia support included the lectures with interactive components and included motivation questions and questions to check understanding; the LMS Moodle (open-source learning management system) was used as a space for all students, where synchronous chats and asynchronous online discussions took place, while assignments for students were also published and the use of tools for sending/uploading the assignments and a space for feedback were made available.

The pedagogical experiment (where the form of teaching was a categorical independent variable) realised in the second semester of the course, but the initial stages were organized before the experiment itself. The e-course was built following the four stage instructional design model (front end analysis - content analysis - sequencing content - evaluation) (see e.g., Morice, 2002).

For both groups, it was the second semester and students knew each other. Similarly, they knew the teacher, tutor. Thus, it was not necessary to start the course with ice-breaking activities. What was necessary to be done was to demonstrate learners how to use e-tools and to navigate them how to get oriented in the e-environment.

Sample

The sample consisted of 125 undergraduate students with mean age of 21 years. The students were divided into two groups (experimental $n=63$ and control $n=62$), with more females than males in both groups. They all study teacher-training programme with the specialization of English language and literature. The groups were formed based on their preferences to become members of the on-campus or e-course group.

Table 1. The sample of the study per group.

Group			Frequency	Percent	Valid Percent	Cummulative Percent
E	Valid	Male	29	46.0	46.0	46.0
		Female	34	54.0	54.0	100.0
		Total	63	100.0	100.0	
C	Valid	Male	27	43.5	43.5	43.5
		Female	35	56.5	56.5	100.0
		Total	62	100.0	100.0	

Instrument and Procedures

The research was originally conducted as two-group posttest-only research. Later, we decided to compare the progress of the students and we used the final results of the previous semester as pretest values, as they all had the same way of evaluation. In both tests (pretest and

posttest) students could reach maximum performance of 50 points. The pretest results also enabled us to determine whether groups had been comparable prior to the research, as the groups were not created randomly.

Learners were also asked to give us feedback answering four questions, namely:

1. Do you use internet more than 20 hours weekly?
2. Do you spend more than 5 hours travelling weekly?
3. Was the presence of the teacher evident? How?
4. Would you enrol in online course again? Why?

The first question strives to find out whether the students incline to use a computer and different applications. We realised that positive answers to this questions cannot be the basis for concluding that they have skills in using computers and different applications. Based however that students volunteered to become a member of the e-group, we concluded that they were computer literate. The truth is that e-students do not need a long special training or preparation and their computacy (computer literacy) does not need to be very high. The second question similarly to the first one was dichotomous. We believed that students who spend long time travelling prefer participation in e-course. Again, the result cannot be generalised, as the results will be reliable in the context of research, but their motivation would be different in case the whole programme exclusively an e-programme.

The third and fourth questions are opinion question with the possible answers on a 1-to-5 bipolar Likert scale (1-strongly disagree, 5-strongly agree). Both questions consisted of two parts and the second part challenged students to freely react and express their opinions.

Data Analysis

The sample was divided into two groups and those were evaluated separately. The data used in the analysis were nominal data (test 1, test 2, progress results), scale data (Q3-4), bipolar (Q1, Q2, sex).

An assessment of the normality of data (experimental and control group) was realised the SPSS – graphically (see figures 1 – 2) and the Kolmogorov-Smirnov test of normality was used to gain the quantified information the data normality.

To test the hypothesis of no difference between two groups we used the analysis of covariance. As we designed groups not randomly (the motivation of learners was accepted) we decided to use the pretest scores as a covariate in ANCOVA with a pretest-posttest design to reduce the error variance and to adjust the posttest means for differences among groups on the pretest. Another reason for using ANCOVA was that the results cannot be assumed to be equivalent on the pretest. Therefore, we use ANCOVA test with the group as the principal independent variable, with the posttest score as the dependent variable, and with the pretest score as the covariate.

Results of Research

As it has been mentioned, the group of 125 students of teacher-training with the specialisation of English language and literature was divided into two groups (the experimental, n=63 and the control group, n=62 students). The normality of distribution of both groups was tested see the following graphs). Three tests were run – Test 1 (pretest), Test 2 (posttest) and Progress (gained scores). The tests showed that the sample data do not approximate a normal distribution in all groups in all tests. The Kolmogorov-Smirnov test of normality was used to check the distribution of the groups (test 1, test 2 and Progress for both groups (control and experimental)).

The following table summarizes the results of the Kolmogorov-Smirnov test of normality.

Table 2. Kolmogorov-Smirnov test of normality.

Test	Group	Statistic	df	Sig.
Test 1 (present)	E	0.132	63	0.008
	C	0.158	62	0.001
Test 2 (posttest)	E	0.138	63	0.005
	C	0.144	62	0.003
Progress (gained scores)	E	0.105	63	0.083
	C	0.158	62	0.001

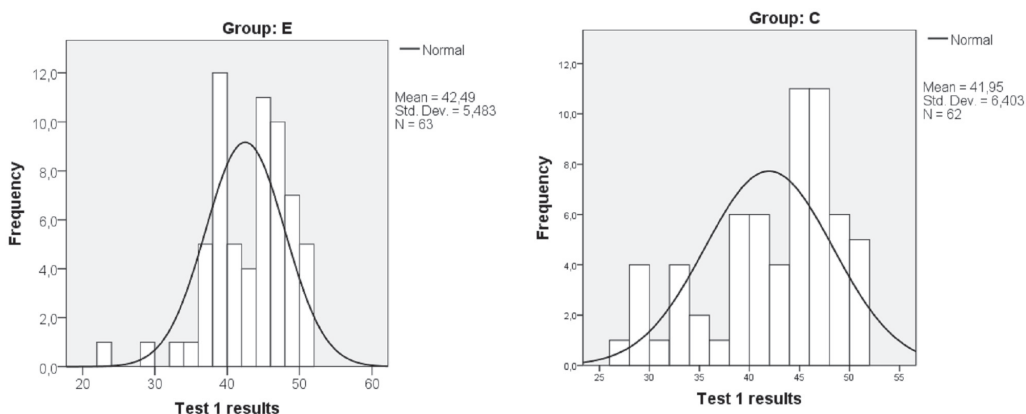


Figure 1: Comparison of experimental and control groups – distribution of pretest scores.

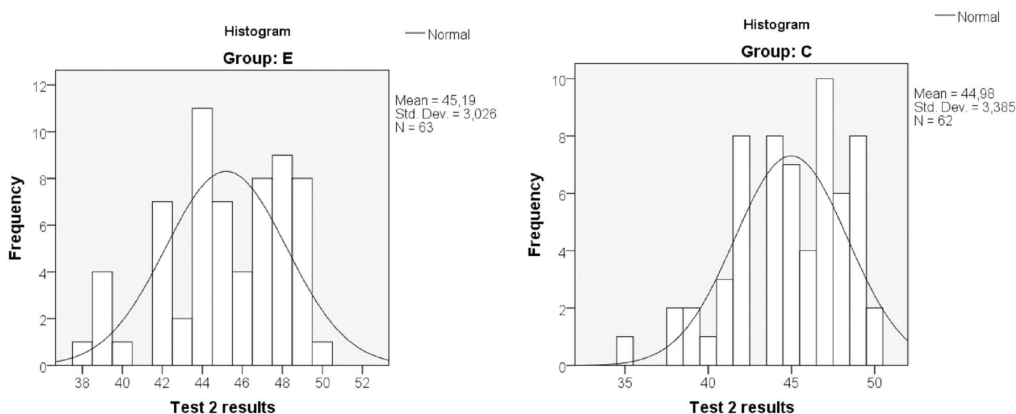


Figure 2: Comparison of the experimental and control groups – distribution of the posttest scores.

Concerning the fact that the groups were not homogeneous as to the Test 1 result the gained scores (progress) was also calculated. Based on the results it was found out that the normal distribution was observed only in the group of students of experimental group and the gained scores results. The histogram shows that the minimum score was -8 and maximum score

22 in the control group while in the experimental group it was -9 and 19. The percentiles were comparable - -1 and 6 in the experimental and -2 and 5 in the control group with the median 2 in both groups.

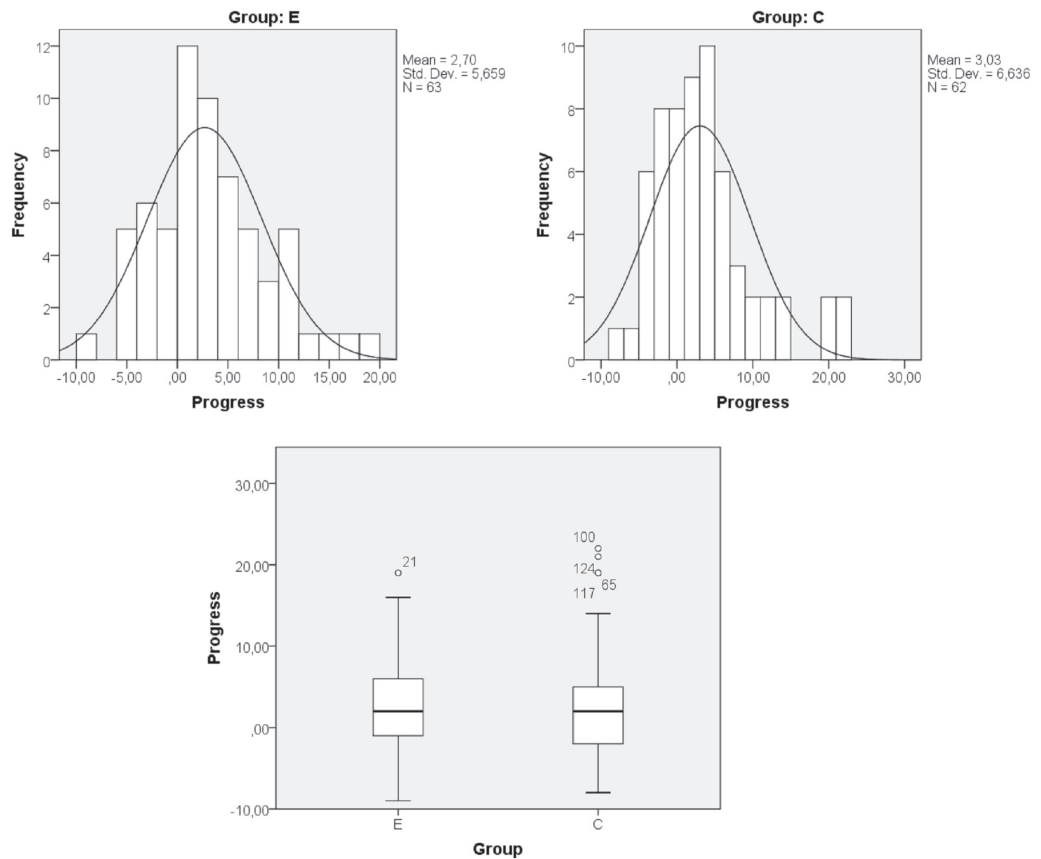


Figure 3: Comparison of the experimental and control groups – distribution of the progress (the gained scores) – normality graphs, histogram.

ANCOVA test results are summarised in the following tables and graphs.

Table 3. Descriptive statistics.

Group	Mean	Std. Deviation	N
E	42.49	5.483	63
C	41.95	6.403	62
Total	42.22	5.939	125

The Levene’s Test for Equality of Variances is a test of the homogeneity of variance assumption. The p-value is greater than the significance level 0.05 (the results was 0.287), what indicates that the variances are homogeneous and we accept the null hypothesis.

Table 4. Tests of between-subjects effects.

Dependent Variable: Test 1 results

Source	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Corrected Model	191,053 ^a	2	95,526	2,786	0.066	0.044
Intercept	391,708	1	391,708	11,425	0.001	0.086
Test2results	181,926	1	181,926	5,306	0.023	0.042
Group	6,667	1	6,667		0.660	0.002
Error	4182,675	122	34,284			
Total	227232,000	125				
Corrected Total	4373,728	124				

The significance value comparing the groups (E, C) is >0.05 , the null hypothesis is accepted. The results confirmed our expectations and the null hypothesis that there is no difference between the two groups was accepted.

There were four questions formulated to find more about the learners and their opinions from the data that were collected in the form of questionnaires. All questions were answered by all learners and Figures 4 and 5 present the data in percentages, as there was no equal frequency of samples.

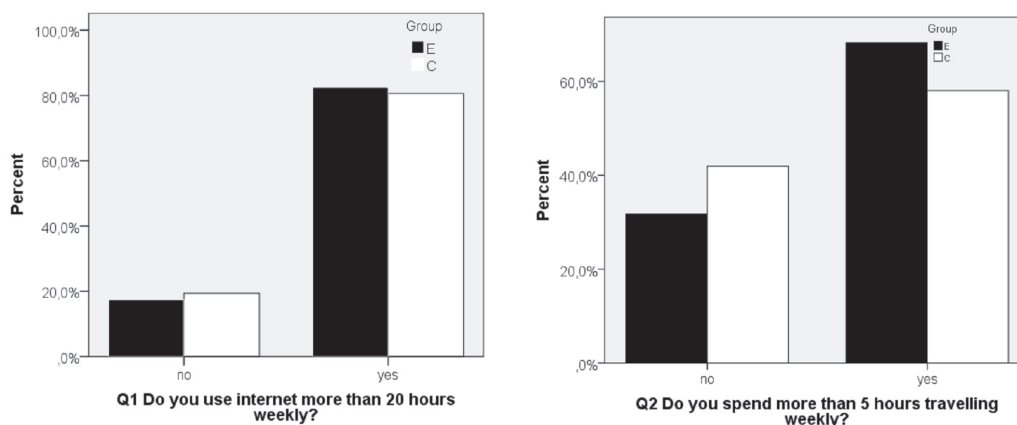


Figure 4 and 5: Comparison of experimental and controlled group – use of internet weekly, travelling weekly.

It can be confirmed from the graphs that the students’ performance in in both groups was not significantly different. It was surprising based on the results, that more than 80% students in our sample use internet more than 20 hours weekly.

It was also clear that the-course was mainly selected by the students who were either commuting or travelling more than 5 hours weekly. This course was a unique exception, since all the other courses were run face-to-face and students had to travel to school irrespectively of where they were living.

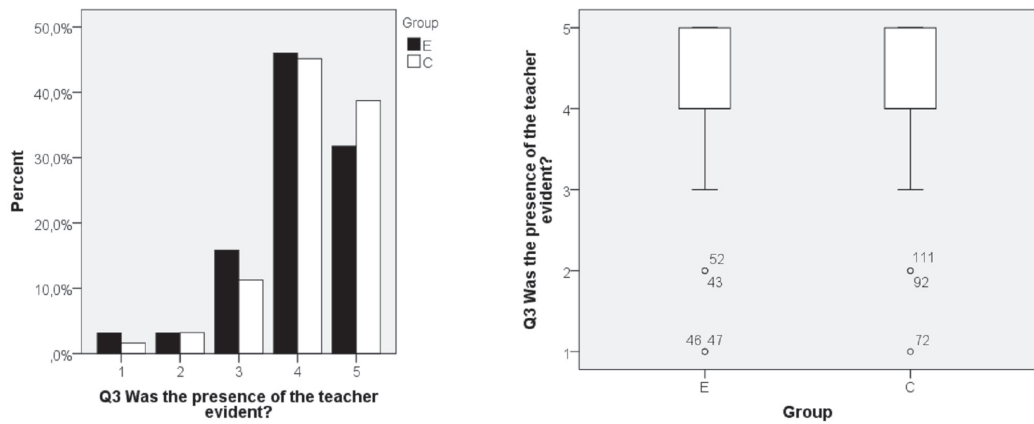


Figure 6 and 7: Perceived presence of the teacher in the experimental and control group.

Frequently the critics claim that it is not possible to build any relationships between the instructor and his/her students in a virtual learning environment as it is in the case of face-to-face environment. The results indicated that correct ways of approaching learners can substitute the physical presence of the teacher. Learners are used to “live” and communicate in virtual space and have no problem to personalise this life.

The last question was focused on the experience of learners with e-course – direct or indirect.

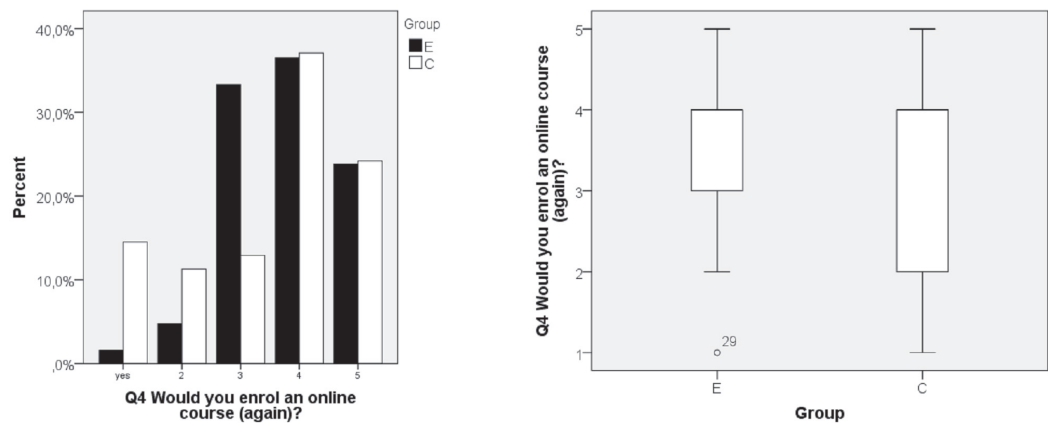


Figure 8 and 9: Interest to enrol in an online course in the future for learners in both groups.

Discussion

The results of some researches, for instance, (Morgan, 2000; Lei & Govra, 2010) show that introducing the online courses as an alternative to the on-campus courses depends on many factors but there are many of those proving its efficacy.

There are numerous studies that compared face to face and online learning and found no significant differences in student learning (face-to-face and online groups), for instance, (Odell, Abbitt, Amos, & Davis, 1999; Beile, & Boote, 2002). The ANCOVA test proved that there is no significant difference between the online and on-campus group in the research and their progress was not a variable that would cause difference in their gained scores. The research

confirmed the null hypothesis and we consider this finding very important as contemporary education shifts towards mobile learning (frequently not systematically and not following the educational principles). Many students in their verbal reports claimed that e-learning led and forced them to search for further information that helped them to get oriented in the sources that are available. They also highlighted the multimedia character of the sources as an important characteristic of education contributing to visualisation, exemplification and clarity of the material presented.

University students are ready to work in virtual reality. Most of them work on computer daily. There is a positive tendency to continue or try to take part in an online course. This tendency was more evident in the experimental group (see figure 8). In both groups the median was the same (4.00), but the mean was slightly higher in the experimental group (3.76) compared to the control group (3.45) (see figure 9).

What was very challenging and motivating for us were the verbal statements from students of the experimental group. Sample reactions: "...I learned so much about CLIL... I read the compulsory article and there were some links that I visited..." "I have never heard about teachertube... I use youtube daily..." "It forced me to study a lot..., at normal lesson, I would ask teacher... But writing an e-mail would take some time, so I'd rather surfed and found much more than I needed... It was good..."

Students became autonomous, the teaching was learner-centred and oriented towards individualisation and building learning strategies. The similar findings were reported e.g. by Weigel, 2005; Dennis, 2007, etc. Various techniques were used to support communication and cooperation, a lot of space was devoted to individual work but there was also enough space for synchronous and asynchronous discussions what supported the group as a whole and also the teacher-student and student-student rapport.

What should be highlighted is that tutors and course designers need a special training programme on the methods and forms used in e-learning and especially training on how to communicate with e-students and keep them attracted and motivated. In addition, we need to find the ways how to support students to become autonomous, independent and still cooperating learners.

Conclusions

Numerous universities offer online courses and over 5 million of learners participate in online course (see Allen, Seaman, 2010:8). As many as "nearly thirty percent of higher education students now take at least one course online" (ibid). This number is more than challenging to consider e-learning to be an alternative of face-to-face teaching and the methodology of e-learning must become a compulsory part of teacher training courses.

Based on the literature and results it can be concluded:

- University students are ready to work in virtual reality.
- Students can reach the same results irrespective of the way of training (online or face-to-face) in terms of e-course methodology.
- Teacher has different tools how to moderate online groups and to act in the role of helper, adviser and organiser rather than controller.
- The author recommends introducing courses on online pedagogy, especially on methodology of development and managing the e-courses as a part of lifelong learning for in-service teachers. (See also Thompson et.sl., 2010)
- The author recommends introducing the compulsory courses for pre-service teachers on using technologies in educational process and courses on methodology of designing and running the e-courses as part of pedagogical education.

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Advised by Zuzana Straková, Prešov University in Prešov, Prešov, Slovakia

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Ivana Cimermanová

Paed Dr., PhD. Lecturer, Presov University in Presov, Faculty of Arts, Department of English and Literature, 17. novembra 1 08001 Prešov, Slovakia.
E-mail: ivana.cimermanova@unipo.sk
Website: <http://www.unipo.sk/en/>