Experimental Verification of Effectiveness of English Language Teaching Using MyEnglishLab

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Abstract: The paper deals with a research focused on the blended learning model represented by an online component MyEnglishLab complementing English paper-based materials. At first, we viewed the blended learning model and we presented it in the context of sustainability in education. This is followed by the description of MyEnglisLab component representing the distant part of blended learning. Then, we presented a complete research carried out within undergraduate students at the Faculty of Science, University of Hradec Kralove attending English courses, where we applied the mentioned teaching design and verifying the effectiveness of MyEnglishLab tool. The study compared two groups of students; the group using MyEnglishLab reached better results.

Keywords: blended learning; MyEnglishLab component; technology enhanced learning

1. Introduction

Many learners daily use different tools of digital technology to an increasing extent. They use them as common communicative, information gaining or information streaming and social-sharing tools. Therefore, they expect technological tools to be used in their education as well. Such use is not expected to be represented by using digital tools only as part of the learning process at schools, but by implementing and using them as transmitters of teaching/learning outside the school. Although many schools and educators expose learners to digital technologies, implementing digital technologies only as an information transmitting means that it does not develop student´s competencies adequately. We can speak about the meaningful integration of digital technologies only if it includes active and sensible student work. There is a long and extensive research line on the use of information and communication technologies (ICT) in schools and its effects on learning. Some of the results point out that ICT tools promote both students' learning and motivation and have great value and potential to encourage inclusion. That is why integrating ICT in teaching methodologies is so relevant for teachers' training and to achieve sustainability goals. [1]

Online learning is one of the most rapidly growing trends in educational uses of digital technologies. For instance, the Sloan Consortium (https://onlinelearningconsortium.org) estimates that 700,000 K–12 public school students took online courses in 2005–2006, and more than a million students did so in 2007–2008: a 43% increase in just two years [2,3]. By the 2006–2007 academic year, 61% of higher education institutions in the U.S.A. offered online courses [4]. In fall 2008, over 4.6 million students-over one quarter of all U.S.A higher education students-were taking at least one online course [5]. Considering other fields of education, in the corporate world, according to a report by the American Society for Training and Development, about 33% of training was delivered electronically in 2007; nearly triple the rate in 2000 [6]. As a result, we can predict that online learning and online learning environments are here to stay, and their increasing implementation in education in the future is obvious.

Technologies used by young people in everyday life influence them many ways; it is the way how they gain and process information, neglecting the question what type of information or data they focus on. They also influence the ways of communication, and we do not have to necessarily speak about the phenomenon of social sites. Last but not least, it is the option to choose entertainment to each person´s individual taste. All the aspects change the way people think and perceive the world. Let us ignore the negative impact of the use of digital technologies on people´s behavior, especially the younger generation, both in schools or outside the school. For instance, alarming results are in the field of Internet addiction, with almost 20% of Czech secondary school respondents showing signs of already developed Internet addiction [7]. On the other hand, there are many pros of using digital technologies in the education process since they enable target individualized students´ learning styles [8].

2. Blended Learning

The education program that combines traditional face-to-face teaching/learning model and distributed teaching/learning model through computer-based technologies is referred to as a blended education program. Additionally, other names for the term blended learning are interchangeable, e.g., hybrid learning, flexible learning, or flipped classroom. [9]. Graham et al. [10] identified the following three most commonly mentioned definitions of blended learning:

1.   blended learning = combining instructional modalities (or delivery media) [11–14];
2.   blended learning = combining instructional methods [15]; and
3.   blended learning = combining online and face-to-face instruction [16–19].

The Online Learning Consortium, formerly called the Sloan Consortium, defined blended learning as learning which integrates online with traditional face-to-face class activities in a planned, pedagogically valuable manner. Graham [20] described blended learning systems as a combination of face-to-face instruction and computer-mediated instruction. Horn and Staker [21] defined blended learning as a formal education program in which a student learns at least in part through online learning with some element of student control over time, place, path and/or pace; at least in part in a supervised brick-and-mortar location away from home; and modalities along each student´s learning path within a course or subject are connected to provide an integrated learning experience.

As we understand blended learning, it is a combination of the present form of teaching/learning and the distant form of teaching/learning. The present form of blended learning is represented by face-to-face, i.e., a personal contact between a teacher and a student or students in a suitable place, mostly a school building. The distant form of blended learning is represented by a non-direct contact with a teacher using modern online technologies, e.g., email, chat, webinars and when learners learn with the help of digital texts, e-learning or online learning.

2.1. Benefits of Blended Learning

Blended learning has been implemented in education rather extensively in the past years and as predictions say, the trend towards blended learning will be increasing in the following years. Graham cites the editor of The Journal of Asynchronous Learning Networks, who predicted a dramatic increase in the number of hybrid (i.e., blended) courses in higher education, possibly to include as many as 80–90% of all courses [20]. The blended learning model represents one of the sustainable trends to develop and pay attention and interest to.

Neglecting the general fact that blended learning combines and benefits from both—the present and the distant part of learning, there are other reasons why a teacher (mentor, instructor, trainer) or a learner might prefer blended learning to other learning programs. Osguthorpe and Graham [9] identified six reasons of the preference. They are: (1) pedagogical richness, (2) access to knowledge, (3) social interaction, (4) personal agency, (5) cost effectiveness and (6) ease of revision.

Although Graham et al. [10] found that people overwhelmingly choose blended learning for three reasons: improved pedagogy, increased access/flexibility and increased cost effectiveness. Related to sustainability, we would like to mention more than these three ones.

2.1.1. Pedagogical Aspect and Sustainability

Minding the aspect of pedagogical richness and sustainability, both the present form and the distant form of blended learning should involve a multi-dimensional and multi-modal approach in the process of teaching/learning. They also should exploit potential of up-to-date digital tools, e.g., images, sound, videos, animations, simulations, etc. Online resources boost students´ interest and motivation in the classroom through a greater diversity of learning goals, projects and outcomes [22].

According to our experience, any online tool that draws students´ attention, ignites interest and motivates students deserves interest. Other benefits of exploiting digital technologies can be seen in the possibility to introduce the real world in attractive ways, and thus, support and help develop cognitive thinking. Thanks to authenticity mediated by digital tools (e.g., through videos, video activities), students can learn through experience, which is considered desirable and subsequently encourages students in learning itself as well as thought processes: problem-solving, decision-making and critical thinking. Moreover, digital technologies increase the demands on consolidation of knowledge gained and skills obtained by students, and make students use them systematically, purposely and repeatedly, simply keeping them active.

All the ways mentioned above address and target both brain hemispheres: the left brain that is the logical and more academic brain responsible for words, logic, analysis, numbers, lists, law and order, detail, time, linearity and sequence, while the right brain is the more artistic, creative and emotional brain responsible for synthesis, colors, imagination, dimension, intuition, emotions, overview, holistic awareness, space and daydreaming. The left brain processes information in a digital way, the right brain processes information in an analogical way. For more information see e.g., [23,24]. Putting the two aspects–logical thinking and emotional engagement–together, for instance, applied graph theory including puzzles and games can be used to help learners gain knowledge [25].

The more both hemispheres are encouraged and trained, the more they can be exploited, and the more they can communicate with each other as one whole. Neither of the two hemispheres is more important than the other. Encouraging, fostering and working on both of them equally make the brain work in a more complex and balanced way. In the sense of sustainability, a human being developing both brain hemisphere activities develops himself harmonically with the high potential of perceiving the world, analyzing and interpreting it to the benefit of a sustainable future.

2.1.2. Access to Knowledge

Access to knowledge seems to be crucial especially to learners that use communication and digital technologies in everyday life. 24/7 (24 h a day, seven days a week) access is considered as common, necessary and expected by learners. Learner flexibility and convenience is also of growing importance as more mature learners with outside commitments (such as work and family) seek additional education [20]. On the one hand, the freedom to decide when, where or in what conditions to get connected and study seems to be very convenient, attractive and useful for learners, on the other hand this aspect appeals to each student´s consciousness and responsibility for learning. Such a tool appealing to lastly-named applies to student-centered learning for a sustainable future.

2.1.3. Social Interaction

Social interaction can be understood as seeking for it or reducing it. The blended learning model benefits from both: social interaction with other students and the teacher/educator in the present/face-to-face form of blended learning, and the autonomous and learner-centered approach in the distant part of blended learning. As Graham says, "Hanson and Clem, Hoffmann, Owston et al., and others observed a preference among many learners for the live (or face-to-face) components of the

blended experience. When blended learning elements were combined, learners often placed a greater value or emphasis on the face-to-face aspects of the experience. Then they also say that juxtaposed to this Offerman and Tassava make the claim that the face-to-face components are really unnecessary and primarily used for socialization reasons." [20].

2.1.4. Cost Effectiveness

Minding cost effectiveness, online technology has the power to address and reach a large number of independent learners at different places and different times, offers them customized content and provides students opportunities to learn according to their needs and possibilities. Online technology often offers direct active work with study materials, educators do not have to photocopy materials, provide and deliver them to an individual student or a group of students with the same needs and they do not have to spend time correcting assignments and giving students feedback.

Outside the school system, Bersin [11] documented corporate cases that effectively used blended learning to provide a large return on investment.

2.1.5. Ease of Revision

As far as the ease of revision is concerned, online learning should offer possibilities to revise the learning content to each individual student according to his time-management and learning needs in the most convenient way. It should be provided in such a learning environment that is user-friendly, conceptual, easily accessible and attractive to the learner. MyEnglishLab seems to fulfill all the mentioned aspects, which we will describe in further detail in the next section.

3. Materials and Methods

The major part of the content of this section is described according to our paper [26].

3.1. MyEnglishLab

MyEnglishLab is an online component designed to complement various English language courses for paper-based coursebooks, e.g., Speakout, Top Notch, New Total English, Choices, Market Leader etc. developed by Pearson Longman. It is a web-based system providing learners 24 h a day, seven days a week online access to the teacher-managed course content.

As an online technology with combination of face-to-face learning it covers both solitary and social approach and autonomous and supported approach. MyEnglishLab is appealing to different types of learners, too—visual, auditory and kinesthetic. Through many interactive activities and attractive materials, it encourages the activity of both brain hemispheres, each of them responsible for different mental processes, and makes them work synchronically. Multi-dimensional and multi-modal approaches to learning that MyEnglishLab provides are profitable for students of different learning style preferences. Thanks to all possibilities that MyEnglishLab enables, teachers can customize course content to any individual learner or a group of learners.

In addition to MyEnglishLab component, teachers can also use an interactive whiteboard – ActiveTeach—a digital version of the student´s coursebook New Total English. This can be then expanded and complemented by additional materials including links to sites that can be attached in advance and saved for later use.

Contribution of MyEnglishLab to Blended Learning

There are basically three contributing elements provided by MyEnglishLab to blended learning:

- Enriched learning
- Informed teaching
- Flexibility

Firstly, enriched learning includes interactive activities, tasks and tests integrated with a course's content. It refers to a variety of activities targeting all language skills in an attractive way, raising students´ interest and engagement in the learning process. The more engaged students are, the more they are likely to learn and gain from learning process. MyEnglishLab activities give tips to help learners study the subject matter as many times they need and direct them to appropriate reference pages. There are also hint boxes that provide clues to complete tasks properly. These facilities encourage students to think and analyze what they are doing rather than guessing answers. They make students think and answer consciously. Learners are given the feedback on their work immediately with the help of automatic grading that also enables them to see their progress.

Secondly, it is informed teaching that helps teachers follow their students´ progress, achievements and success. Teachers can observe students´ work and activity, achievements or weaknesses in graph reports.

Subsequently, the teachers can customize assignments to students from the obtained data. MyEnglishLab enables to mark students´ homework automatically. The time saved by automatic correction enables the teachers to target weaknesses of each individual student or a group of students, and manage and customize the course content accordingly.

Thirdly, it is the flexibility that can be achieved through MyEnglishLab easily. These days, students have different needs and weaknesses they have to deal with. As mentioned above, MyEnglishLab enables to assign customized activities according to students´ needs or preferences. Flexibility also includes an easy communication with the educator outside the classroom. The teacher can communicate with students, sending them messages through the application. Learners can access all the activities when they are online anytime and anywhere.

MyEnglishLab, together with ActiveTeach, appears as an open application. As a result, the teacher can attach any documents from previously prepared files, or any links to web sites. Through this, an unlimited range of various sources of information and activities is available and the course content can be expanded with other supporting materials.

3.2. Research Study Design

3.2.1. Motivation for the Research Study

According to CEFR (Common European Framework of Reference for Languages), students entering the Faculty of Science at University of Hradec Kralove are supposed to have English language skills at reference level B2. At the end of secondary school studies, students take secondary school leaving examinations, and passing them is a prerequisite to be enrolled at a university. Students have the option to choose between taking Math or English exams. Either way, students are supposed to have English language skills at reference level B2. Unfortunately, the entrance language tests show that a not negligible number of students have a reference level below B2. As a result, there is a gap between expectations and real knowledge of English language when these students enter the university. Moreover, the situation gets complicated at the very beginning of their university studies, because apart from knowledge of general English, they are supposed to comprehend and apply English within their area of study, e.g., financial mathematics, physics, toxicology, etc.

Our undergraduate students take an English course that is taught in two lessons a week, each 45 min long for the period of two years (four semesters). Reflecting the amount of lessons and the lower level of English language skills, it is very challenging and even stressful for such students to achieve the required university standards at the end of the language course. The required standards include both the acquired knowledge of professional and academic English, according to the majors studied, as well as general English. Students, for instance, work with technical texts containing both professional vocabulary and everyday English. They need to understand the texts, assignments and instructions, they have to suggest solutions, give practical examples, discuss problems and suggest problem-solving strategies and they need to be able to communicate with other foreign students or

academics. Moreover, since our students take part in Olympiad teams and participate in international Olympics rounds, they are supposed to speak English well.

We considered different possibilities to make learning for students with lower levels of English proficiency as convenient and effective as possible. As mentioned above, the English course is taught with two lessons a week, which is rather challenging for both students and teachers. We found the blended learning model as the ideal solution for both sides, and we distributed the teaching of general English in the first lesson followed by teaching professional English in the latter lesson of each week´s double lesson. Minding the required volume and content of our English courses, it would be impossible to include and cover them in just 45-minute lessons only at university. We found it absolutely necessary to provide our students with learning tools that they could use outside the school according to up-to-date standards and requirements. Why the blended learning model is advantageous for students these days follows from the aspects described above.

As we mentioned, at the end of the English course at the Faculty of Science students have to master English language according to their field of study, i.e., obtain a professional and academic vocabulary and language fluency. Tutors teaching English for different areas of study (financial mathematics, physics, toxicology, etc.) at our faculty are supposed to make and create teaching materials on their own according to the curriculum of each area of study. They take the possibility and advantage to create and then distribute the teaching materials (professional English materials) to students through the Moodle virtual learning environment that is used at our university. Nevertheless, tutors also called for the need of additional materials to support, deepen and improve English language skills of everyday use (general English) for the reasons mentioned before. Since creating such materials is very time-consuming, and moreover, demands on the quality of such materials are very high, it would not be possible for the tutors to fulfill these demands and expectations. Therefore, we started looking for an attractive, best-fitting, easy-accessible and money-reasonable resource to be used in the distant part of blended learning. Minding all the named aspects, we considered MyEnglishLab as a suitable tool to fulfill our requirements.

Since MyEnglishLab also enables direct active work with study materials, educators do not have to photocopy materials and they do not have to spend time correcting assignments and giving students feedback (Section 2.1.4).

We should mention the fact that MyEnglishLab can be integrated with the Moodle system, which finally enabled to distribute the study materials to students in the experimental group within one system. These study materials included technical texts, complementary materials or links to sites (students in the control group were sent these materials through Moodle).

3.2.2. Methodology, Objectives and Hypotheses

The research study was carried out from September 2014 until June 2017 as a pedagogical experiment. The purpose of the experiment was to compare two groups of students—the experimental and control groups; concretely, to compare students´ acquired English language knowledge and English language competences depending on the use of MyEnglishLab online component in the distant part of the blended learning model or on the use of traditional paper-based materials.

There were two sets of study materials used; one consisting of the student´s book and workbook in the control group, the other consisting of the student´s book and the online access to practice called MyEnglishLab in the experimental group. The work book and the online access were intended to be used outside classes. The course design of the paper-based material, the workbook (intended to be used outside classes in the control group), and the online practice (intended to be used outside classes in the experimental group) were equal in the sense of the content, types of exercises and variety of exercises. Obviously, the way of practicing was different from the nature of the online environment and possibilities of paper-based practicing, as described below.

During the lessons, all students worked with the student´s book and all students were exposed to the use of ActiveTeach (a digital version of the student´s coursebook). Both the student´s book and the

workbook fulfilled high standards of original English study materials comparable to, e.g., Empower by Cambridge, Headway or English File by Oxford, etc.

The general objective of our research study was the experimental verification of blended learning, whose distant part was applied by the online component to paper-based English material New Total English intended for students in English language undergraduate courses at the Faculty of Science, University of Hradec Kralove.

We postulated that students in the experimental group would show better results in language competences (excluding speaking) than students in the control group.

The specific objective was to analyze quantitatively the process of training language competences (excluding speaking) based on didactic tests—the pretest, achievement test and posttest.

With regard to our postulate, we stated the following null hypotheses:

Hypothesis 1 (H1): *Students´ results in grammar skills do not depend on the way of practicing the curriculum—either using MyEnglishLab component or using traditional paper-based materials.*

Hypothesis 2 (H2): *Students´ results in vocabulary do not depend on the way of practicing the curriculum—either using MyEnglishLab component or using traditional paper-based materials.*

Hypothesis 3 (H3): *Students´ results in reading comprehension do not depend on the way of practicing the curriculum—either using MyEnglishLab component or using traditional paper-based materials.*

Hypothesis 4 (H4): *Students' results in listening comprehension do not depend on the way of practicing the curriculum—either using MyEnglishLab component or using traditional paper-based materials.*

3.2.3. Variables and Test Units

Our independent variable was students using the MyEnglishLab component. The dependent variables were the improvement of English language knowledge acquired and detected by didactic tests, and the evaluated increased students´ motivation and their active participation in the education process detected by interviews, questionnaires or observation depending on the number of respondents.

3.2.4. Research Sample

There were 142 undergraduate students (aged 19–22) of the Faculty of Science, University of Hradec Kralove participating in the research. In order to avoid any influences, students were randomly divided into two groups—an experimental group consisting of 71 students and a control group numbering 71 students.

3.2.5. Testing

Students involved in the study research took a pretest, three progress tests and a post-test, all of them testing four language skills: grammar, vocabulary, reading and listening. The pretest was assigned at the beginning of the English course, each progress test was assigned at the end of each semester, i.e., after the first, second and third semester, and finally students took a post-test at the end of their English course, i.e., after four semesters. The test results in percentage were recorded and the progress between the pre-test through the achievement test (= progress test after the second semester) to the post-test was processed statistically. Software R was used to analyze statistically the sampled data.

After testing and finishing the English course, students discussed their opinions, what they found as advantageous and profitable, what helped them most of all and of course, what they saw as disadvantageous, disappointing, not helpful, difficult to deal with or useless.

4. Results and Discussion

At the beginning, all students were informed about the research study intended to be carried out in the course of their studies. They were all asked to give the researcher permission to do so and agree with the participation in the research. All students included in the research agreed on their participation and we followed all GDPRs (General Data Protection Regulation). In order to avoid any influences, students were randomly assigned into two groups. Each group included 71 students. The pre-tests results of both groups are presented in Table 1.

Table 1. Pre-test results.

Variable	Group	Mean	Standard Deviation
Vocabulary	control	67.04	6.27
	experimental	67.01	6.15
Grammar	control	64.07	7.00
	experimental	65.38	5.98
Reading	control	63.15	7.53
	experimental	64.38	6.47
Listening	control	58.23	7.62
	experimental	59.27	6.74

Software R was used to analyze statistically the sampled data, namely to support our assumption that there are no statistically significant differences between groups in vocabulary, grammar, reading and listening skills. We performed the two-sample t-test based on the data from the pre-test proceeded by the F-test for equality of variances of samples.

The results are shown in Table 2 with corresponding critical values (F-value for the F-test and t-value for the t-test) and their p-values. The last column contains adjusted p-values to lower the probability of type I errors using the false discovery rate method.

According to the results gained, see Table 2 (for each skill $p > 0.05$), we could assume that the groups were independent and there were no statistically significant differences between them (in terms of English language skills) before our experimental teaching started. From this we can state that the control and experimental groups were comparable in both the number of students and the distribution of students of English language knowledge.

Table 2. Independent Samples Test.

Variable	*F*-Value	*p*-Value	*t*-Value	*p*-Value	*p* Adjusted
Vocabulary	1.04	0.87	−0.05	0.96	0.96
Grammar	1.37	0.19	−1.2	0.23	0.31
Reading	1.36	0.2	−1.04	0.3	0.36
Listening	1.28	0.31	−0.86	0.39	0.43

At the end of our experimental teaching the students were tested by the post-test. The post-test results of both groups are presented in Table 3.

Table 3. Post-test results.

Variable	Group	Mean	Std. Deviation
Vocabulary	control	73.73	5.68
	experimental	77.24	4.91
Grammar	control	69.69	6.52
	experimental	74.67	6.3
Reading	control	67.16	8.01
	experimental	74.1	6.52
Listening	control	61.02	8.13
	experimental	70.53	6.72

Again, software R was used to analyze statistically the sampled data. At first, we were interested in the results of the hypotheses (see Section 3.2.2). We performed the two-sample t-test based on the data from the post-test again proceeded with the F-test. Table 4 and Figure 1 show the obtained results.

Table 4. Independent Samples Test.

Variable	*F*-Value	*p*-Value	*t*-Value	*p*-Value	*p* Adjusted
Vocabulary	1.34	0.31	−3.34	0.0012	0.002
Grammar	1.07	0.81	−3.89	0.0002	0.0004
Reading	1.51	0.15	−4.8	0	0
Listening	1.46	0.18	−6.44	0	0

(**a**)

(**b**)

Figure 1. *Cont.*

(**c**)

(**d**)
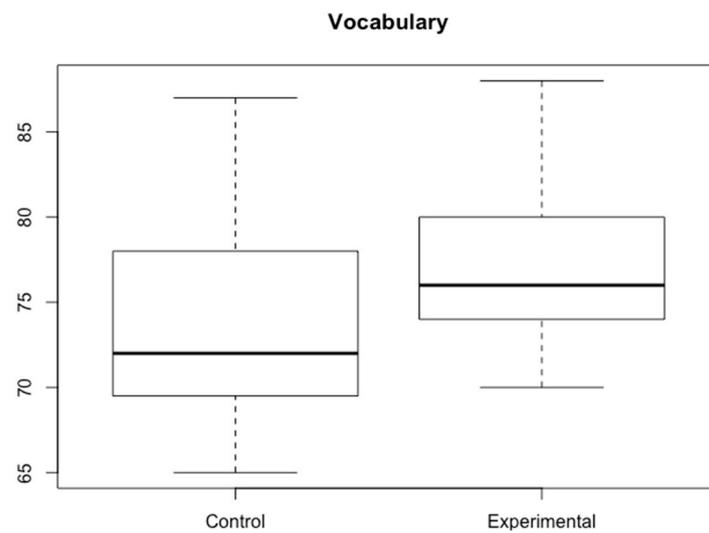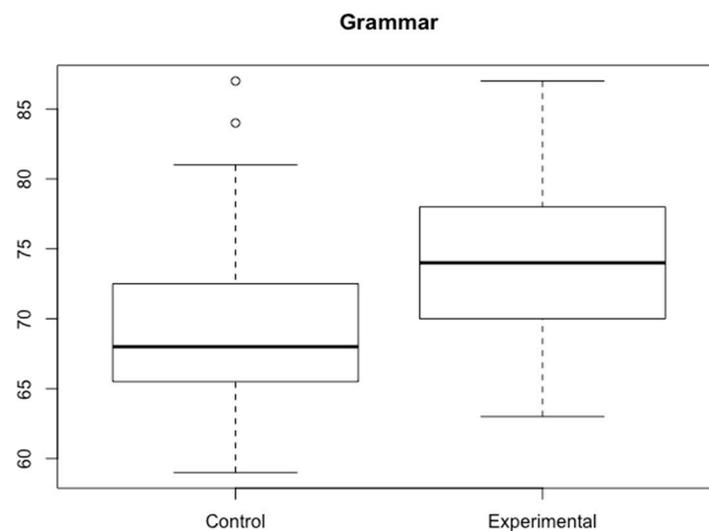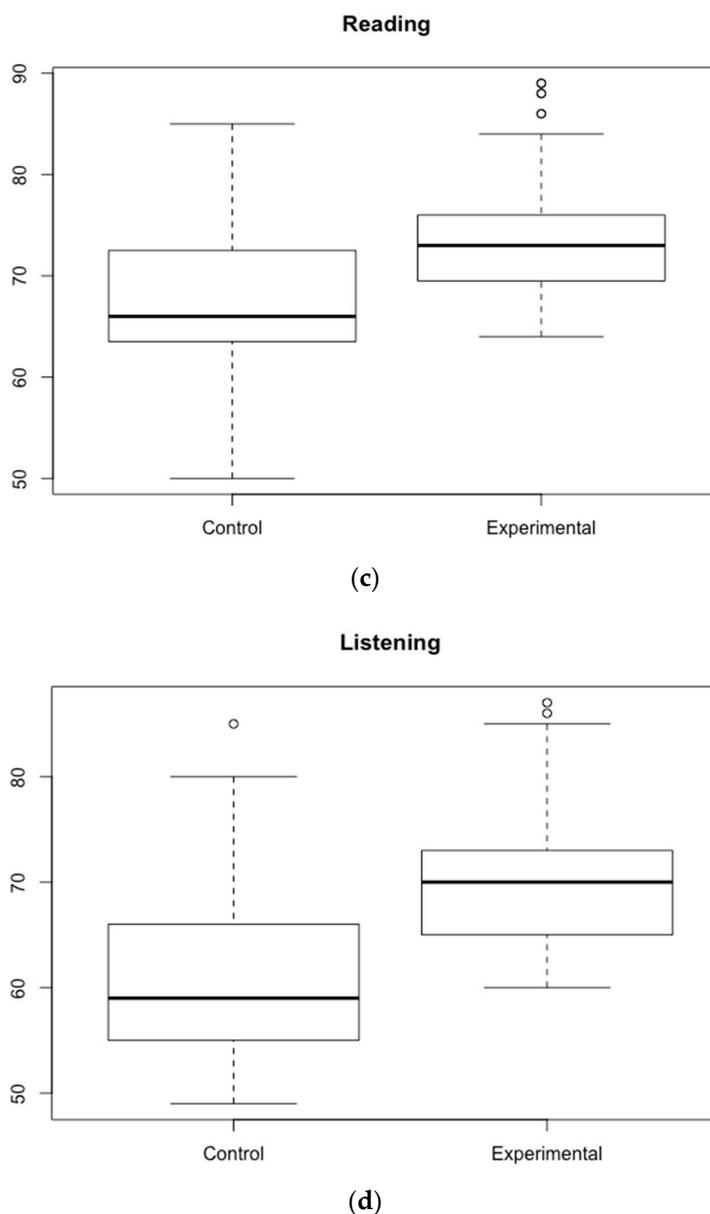
Figure 1. Box plots for each skill (**a**) Vocabulary, (**b**) Grammar, (**c**) Reading and (**d**) Listening according to the post-test.

The obtained results ($p < 0.05$ for each skill, see Table 4), showed that the average knowledge of each skill in the experimental group was significantly higher than that in the control group, and thus, all four hypotheses (see Section 3.2.2) may be rejected.

The results for Vocabulary and Reading show that in both groups the highest score remained similar; however, the lowest score was much higher for the experimental group. This could mean that good students were at the same level regardless the way of practicing; however, for weaker students, we can state that the improvement was greater using the online practice. For Listening and Grammar, the improvement was greater overall for the experimental group. Moreover, for Reading and Listening, the variance of the experimental group was lower (not statistically significant), which could indicate that results of students using the online practice were more balanced.

Moreover, we present the results of the achievement test fulfilled by students after the second semester, see Table 5, Table 6 and Figure 2.

Table 5. Achievement-test results.

Variable	Group	Mean	Std. Deviation
Vocabulary	control	72.13	6.64
	experimental	74.38	5.24
Grammar	control	67.85	6.66
	experimental	72.85	6.77
Reading	control	68	7.01
	experimental	72.55	6.47
Listening	control	65.6	7.2
	experimental	70.64	6.91

Table 6. Independent Samples Test.

Variable	*F*-Value	*p*-Value	*t*-Value	*p*-Value	*p* Adjusted
Vocabulary	1.49	0.148	−1.99	0.049	0.073
Grammar	0.967	0.905	−3.87	0.0002	0.0006
Reading	1.2	0.5	−3.47	0.0008	0.0015
Listening	1.086	0.764	−3.7	0.0003	0.0008
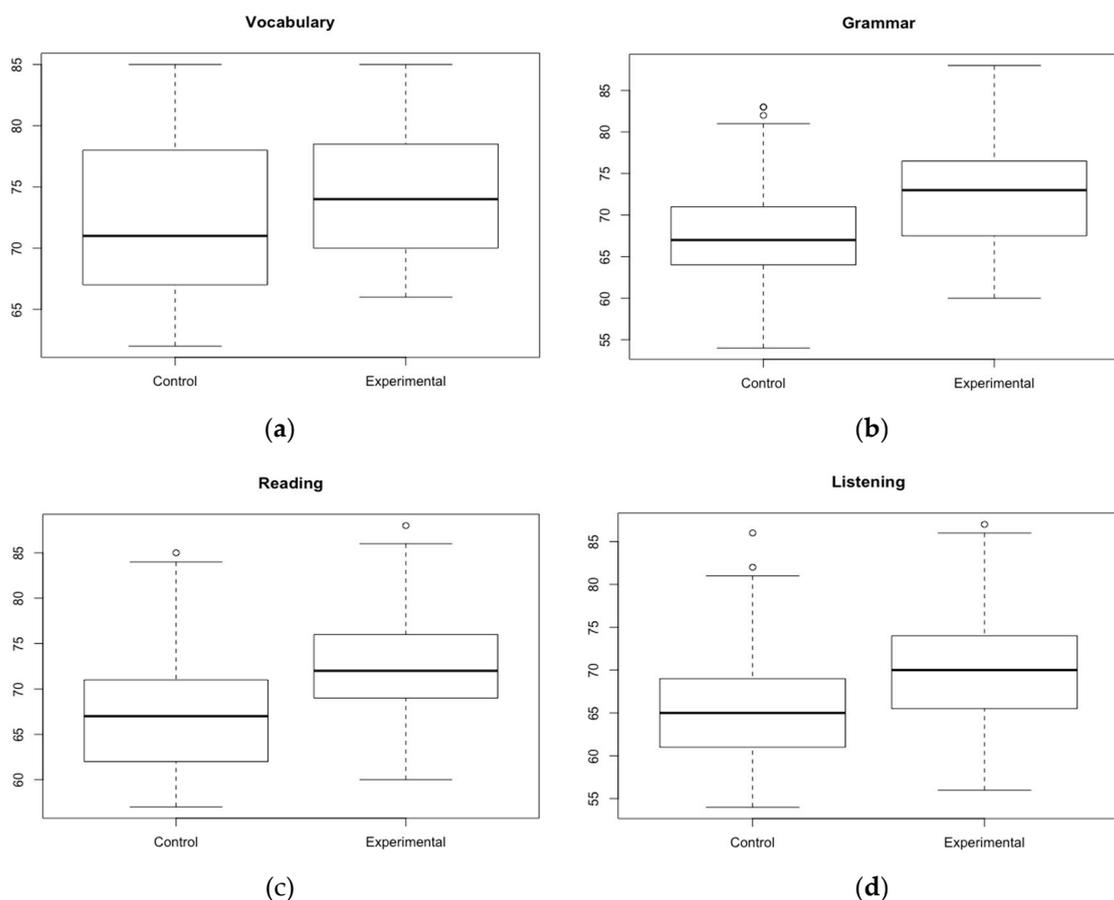
Figure 2. Box plots for each skill (**a**) Vocabulary, (**b**) Grammar, (**c**) Reading and (**d**) Listening according to the achievement-test.

From Table 6, we can see that the average knowledge of each skill in the experimental group was significantly higher than that in the control group ($p < 0.05$) with the exclusion of Vocabulary ($p = 0.073$).

All skills showed a similar trend as seen from previous figures; however, the trend was not as strong. The experimental group showed a higher shift in the obtained score for the weaker students in

Vocabulary and Reading, in contrast with Grammar and Listening where the shift is applicable for all students.

In conclusion, we present the results obtained by the Analysis of variance (ANOVA) relating to the comparison of the improvement rate of a particular skill, see Table 7, Table 8 and Figure 3.

Table 7. Control group (*F*-value = 19.93, *p* < 0.001).

Skills	*p* Adjusted
Grammar-Vocabulary	0.2807577
Reading-Vocabulary	0.0000346
Listening-Vocabulary	0
Reading-Grammar	0.0236743
Listening-Grammar	0.0000013
Listening-Reading	0.0618363

Table 8. Experimental group (*F*-value = 2.677, *p* = 0.0483).

Skills	*p* Adjusted
Grammar-Vocabulary	0.8037572
Reading-Vocabulary	0.8758572
Listening-Vocabulary	0.3676629
Reading-Grammar	0.9987855
Listening-Grammar	0.0590282
Listening-Reading	0.0851808
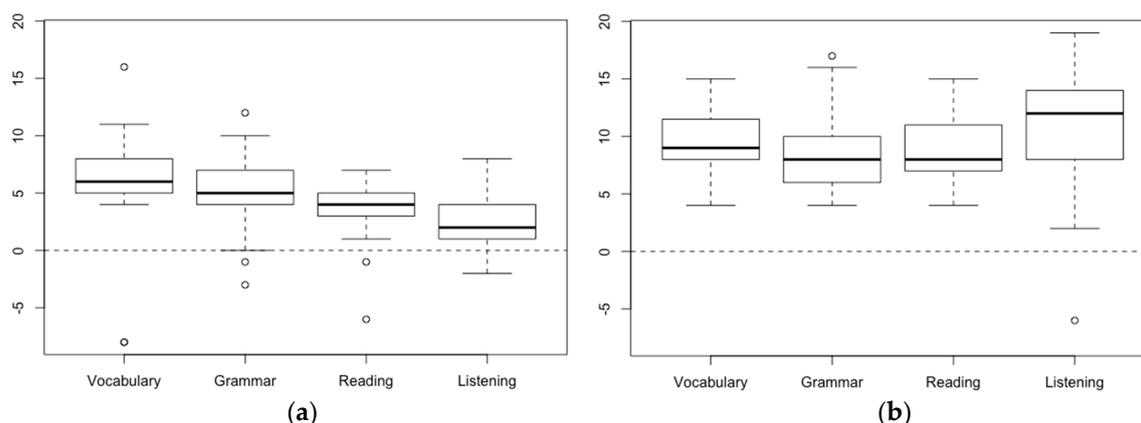
Figure 3. Analysis of variance (ANOVA) for (**a**) control group of students and (**b**) experimental group of students.

The results show that the control group improved differently in specific language skills—the greatest improvement was achieved in Vocabulary, while little improvement was reached in Listening. For the experimental group, students improved more or less evenly in all skills (*p* = 0.0483) with a slight (almost negligible) difference in Listening in comparison with Grammar.

Summary: from the achieved results (by students), we can assume that:

- At the beginning of our research, students showed Listening as their weakest skill. This finding corresponds with teaching English language at most secondary schools in the Czech Republic where students are mainly trained to practice and master Vocabulary and Grammar (drill).
- The greatest benefit and impact of MyEnglisLab was recognized in Reading and Listening skills. Through these skills, a significant difference between both groups was demonstrated after the first year of the use of MyEnglishLab.

- As for Vocabulary, both groups showed comparable results after the first year. After the second year, the students of the experimental group finally achieved better results in comparison with the control group, even though the control group showed the greatest progress in Vocabulary.

In the open discussion, students were asked to mention both advantages and disadvantages of MyEnglishLab. They were asked to do so through brainstorming; the following discussion was led with the help of mind maps to support and explain the ideas more concretely. Students, for example, appreciated the access—the possibility to get connected according to their needs and time-management. Additionally, they liked the feedback—it gave them a picture of how ´successful´ they were.

Moreover, they liked the teacher feedback in the face-to-face part of blended learning, that is, the feedback of their online work. We appreciated any success and progress or encouraged students to ask for help or consultations. MyEnglishLab enables to monitor students' work with the help of graph reports, which was used not only for educational purposes as to customize the study content, but also to let students know that they are in the teacher´s center of attention and interest. This might have supported the teacher-student communication, relation and overall atmosphere. Although at the beginning students did not seem to like being monitored and controlled by the teacher, they concluded at the end of the study that this control made them work more consciously. Moreover, they mentioned that the system felt autonomous, but never anonymous.

As for the skills, students agreed on highlighted text while working with listening and videos. The eye-supported technique together with the sound helped them identify the spoken English, and thus, helped them to understand much better.

Furthermore, students in the experimental group agreed that if they had been asked to choose either way at the beginning (without knowing the benefits of the system before using it) they would have more probably decided on the paper-based materials, since they had been used to working with them before (at lower stages of education).

In general, students using MyEnglishLab agreed on its helpfulness and effectiveness, despite the initial reluctance and unwillingness to study with materials of a new/unknown system.

5. Conclusions

The Faculty of Science, University of Hradec Kralove, demands students to obtain professional and academic English proficiency, which includes maintaining, improving and deepening English language proficiency for everyday use. The blended learning model seems to be, undoubtedly, a suitable and efficient way of fulfilling these requirements, and additionally implements demands for digital-mediated teaching/learning as an important factor in modern and up-to-date education. MyEnglishLab, chosen for the distant part of blended learning, is a complementing component to various paper-based materials. Not only does it replicate the content of a workbook, it presents these through different tools that digital technologies enable, namely, images, videos and sound, all in attractive ways in an authentic context and an engaging environment. These aspects have the impact not only on study results, but also on motivation to study. Our research contributes to the field of blended learning efficiency and its results can be compared to similar studies proving the efficiency of blended learning [27], although no other research in blended learning whose distant part would be represented by using MyEnglishLab has been found.

Students using MyEnglishLab appreciated a well-designed course in the sense of helpful and interesting activities, interactive, engaging and attractive learning environment, instant feedback of their work, possibilities of individualized practice, self-managed practice and time-independency. As our research study shows, students using MyEnglishLab in their English courses reached better results in grammar, vocabulary, reading and listening skills in comparison with students using conventional paper-based materials through modern and efficient learning digital environment. We can consider it not only a question of acquiring certain skills, but also of reformulating the relationship between knowledge, practice, and sustainability experience (compare [27,28]).

This, in combination with the high standard of the learning environment that MyEnglishLab provides, makes the component a very effective tool in education and worth recommending.

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