

# SVETIMŪJŲ KALBŲ STUDIJS/STUDIES OF FOREIGN LANGUAGES

## Case Study: English for Specific Purposes in Moodle Area

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**Abstract.** This article examines application of *Moodle* tasks for vocabulary revision in English for Specific Purposes (ESP). The study is based on the analysis of data obtained from the survey of students' attitudes to *Moodle* tasks and to formal ESP tests in class. Learner performance in *Moodle* tasks is reported by comparing responses of the 1st and 2nd year students who study psychology. Statistical processing of the data by the means of Software Package for Social Sciences (SPSS) included the computations of Cronbach's Alpha coefficients of reliability and the non-parametric Spearman correlation coefficients, which indicate the strength of relationships and their statistical significance. The values of Spearman correlation coefficients between the groups of psychology learners are within the range of 0.7 and 0.9, which demonstrate good correlations between the responses, at the significant levels either 0.05 or 0.01. It means that the relationships are not likely to be due to chance. Students' feedback on the activities in the *Moodle* area is described in their weblogs as part of each term self-assessment assignment. Some students' reflections are reproduced and discussed below. The ongoing performance of both groups in *Moodle* tests is presented and analyzed. It has been concluded that students prefer *Moodle* tasks to traditional formal testing as less stressful.

**Key words:** e-learning, Moodle tasks, English for Specific Purposes, statistical processing, formal testing.

### Introduction

E-learning includes all forms of electronically supported learning and teaching. It essentially refers to using electronic applications and processes such as Web-based learning, computer-based learning, virtual classrooms and digital collaboration.

This article aims at examining application of *Moodle* tasks for revision and testing of professional vocabulary in ESP and drawing conclusions about its suitability at university level.

**The aims of the research:** to investigate learner perceptions of *Moodle* application at tertiary level for revising ESP vocabulary, self-checking reading comprehension of professional materials and testing.

### Research methods used:

- 1) part of a specially designed questionnaire (see Appendix);
- 2) the excerpts of students' feedback on *Moodle* assignments taken from their self-assessment written entries in the weblogs and drawing conclusions on *Moodle* application in ESP;
- 3) the data on the ongoing performance in *Moodle* assignments and its analysis.

**The respondents** in this research are the 1<sup>st</sup> and 2<sup>nd</sup> year students of psychology, 69 students altogether. They studied ESP at the Faculty of Social Policy, Mykolas Romeris University, Vilnius, Lithuania.

### Research Background

The use of open source software to deliver e-learning is becoming increasingly popular, and *Moodle* (or Modular Object Oriented Dynamic Learning Environment) is one of

the most widely used packages. It was developed by Martin Dougiamas in Australia in the 1990s as part of his PhD in education (<http://dougiamas.com>), and *Moodle* usage has increased ever since. One of the features used in *Moodle* are exercises, generally with automatic feedback, which might allow students to consolidate their learning and put it into context after receiving new information. Although the most commonly used form of exercise is multiple choice, other formats are available, including blank filling, short answers, and true/false questions.

By 7 January 2011, *Moodle* had a user-base of 49,945 registered sites with 39,308,196 users in 4,130,193 courses in 211 countries and in more than 75 languages (<http://moodle.org/stats>). Among top ten sites by courses there is the Lithuanian VDU *Moodle* site. The development of *Moodle* continues as a free software project supported by a team of programmers and an international user community.

*Moodle* benefits are numerous ([http://www.unisa.edu.au/learnonline/staff/moodle\\_benefits.asp](http://www.unisa.edu.au/learnonline/staff/moodle_benefits.asp)):

- 1) A robust and flexible online environment that fosters student learning and facilitates interactions between learners and between learners and teachers.
- 2) A stable, responsive and seamless online teaching and learning environment that significantly reduces the current operational risks associated with the current in-house developed learning management system.
- 3) A stimulating and rewarding higher education experience for students which will strengthen the University's capacity to attract and retain future students.
- 4) Better collaboration and content creation tools for students leading to higher levels of engagement with

the online environment and ultimately improved learning outcomes. However, there are some disadvantages such as the lack of flexibility when obtaining data about groups of students or the answers in the quizzes shuffle automatically and cannot currently be switched off. These minor points should be resolved by forthcoming developments.

*Moodle* has not been widely used in language education, although its advantages in e-learning are obvious. According to some preliminary findings by Lei Chunlin (online), 37.5 % of respondents are fully satisfied with *Moodle* activities, 50% are moderately satisfied and 12.5 % are not satisfied. Moreover, 87.5 % believe that *Moodle* is “obviously advantageous” or “advantageous over other e-learning means”; 87.5 % of respondents are either satisfied or fully satisfied with teaching needs; 87.5 % agreed or strongly agreed that *Moodle* is user friendly and easy to use. Only 25 % of respondents reported few technical problems with *Moodle*.

Stanford (2008) claims that there are ten reasons for choosing *Moodle*: easy to use, excess to resources via the web, interaction between learners and tutors, collaboration between learners, independent learning pathways, learner tracking, feedback on tasks, secure environment, automatic backup, detailed grade book based on work submitted by students.

There is very little research published on application of *Moodle* in language education, although this area seems to be relevant and promising.

*Moodle* activities in the ESP classes have been used for two academic years. This experience in language education may be of interest to language practitioners who might apply assignments designed for the *Moodle* area in their daily teaching practice.

### Respondents and Research Methods

The aims of this research have been to identify the 1<sup>st</sup> and 2<sup>nd</sup> year students’ perceptions of revision in *Moodle* area (Kavaliauskienė, <https://moodle.mruni.eu>) as a tool of self-checking the acquisition of the ESP vocabulary as well as analyze students’ performance in *Moodle* tasks and their reflections on usefulness of working in the *Moodle* area.

The respondents were the full-time students who study psychology at tertiary level. There were 38 1<sup>st</sup> year students and 31 2<sup>nd</sup> year students, 69 participants altogether. The respondents were predominantly females between 18 and 20 years old. Students were spread over two English proficiency levels: intermediate and upper-intermediate according to their score on the Oxford Placement Test at the beginning of the ESP course. The amount of time spent in L2 environment was 3 hours a week for 2 semesters. The 1<sup>st</sup> year students conducted *Moodle* tasks in the first semester of the ESP course while the 2<sup>nd</sup> year students — in the last semester of the ESP course.

The most frequent method for identifying student attitudes is through self-reported data like questionnaires, interviews or diaries (weblogs), all of which have been employed in this study. The specially designed questionnaire was administered to all groups at the end of the semester. The

questions of the questionnaire are reproduced in Appendix and in the Results section below. The questionnaire consists of 5 statements, to which students responded on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Statistical processing of the data by the means of Software Package for Social Sciences (SPSS) included the computations of Cronbach’s Alpha coefficients of reliability (or consistency of the data) and non-parametric Spearman correlation coefficients, which indicate the strength of relationships and their statistical significance.

Students’ reflections have been used for the analysis of attitudes to the *Moodle* tasks and some goblets are reproduced below. Complete learner feedback is available online (Kavaliauskienė, 2010) and contains students’ self-assessment of their success or failure.

Students’ performance if *Moodle* tests has also been analyzed and discussed.

### Results

The responses of students to the survey questions are summarized in Table 1. The questions are shown in the first column, and the responses in percentage are given in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> column, respectively. For clarity, the responses are presented on 3-point scale, i.e. by adding up “strongly agree” and “agree” as well as “strongly disagree” and “disagree”.

**Table 1.** Positive, Neutral and Negative Responses of 69 Respondents.

| Survey statements   | Positive answers % | Neutral answers % | Negative answers, % |
|---|--------------------|-------------------|---------------------|
| 1. While doing the tests in the Moodle area, I usually check my answers in the course book. | 85                 | 5                 | 10                  |
| 2. Moodle tests are easy to do.   | 10                 | 14                | 76                  |
| 3. Moodle tests are useful for revision of ESP vocabulary or definitions.                   | 80                 | 10                | 10                  |
| 4. While writing ESP tests in class, I usually try to retrieve information from my memory.  | 84                 | 16                | -                   |
| 5. Writing ESP tests in class is stressful and not enjoyable.                               | 73                 | 18                | 9                   |

According to the 1<sup>st</sup> statement, 85 % of respondents use their course book while doing *Moodle* exercises to check their answers to *Moodle* questions. According to the 2<sup>nd</sup> statement, the respondents do not feel that *Moodle* exercises are easy: 76 % disagree with the 2<sup>nd</sup> statement. Majority of students, namely 80 %, agree that *Moodle* area is useful for revision of ESP vocabulary and definitions (the 3<sup>rd</sup> statement). In formal ESP tests on vocabulary definitions (the 4<sup>th</sup> statement) 84 % of respondents rely on their memory, in

other words, they memorize definitions of professional terms. Writing formal ESP tests is hardly enjoyable (the 5<sup>th</sup> statement) to 73 % of students.

### Statistical Processing of Data

The obtained responses have been processed statistically using SPSS in order to determine how comparable and reliable the data are. Internal consistency reliability is usually estimated by computing Cronbach's Alpha coefficient. According to the theory (Dornyei, 2003), results are reliable if the value of Cronbach's Alpha coefficient is at least 0.60. The findings of computations are presented in Table 2.

**Table 2.** Reliability Statistics of the Responses for the 1<sup>st</sup> vs 2<sup>nd</sup> Year Groups of Psychology Students.

| Survey Statements   | Cronbach's Alpha |
|---|------------------|
| 1. While doing the tests in the Moodle area, I usually check my answers in the course book. | .71              |
| 2. Moodle tests are easy to do.   | .74              |
| 3. Moodle tests are useful for revision of ESP vocabulary or definitions.                   | .68              |
| 4. While writing ESP tests in class, I usually try to retrieve information from my memory.  | .77              |
| 5. Writing ESP tests in class is stressful and not enjoyable.                               | .96              |

All computed values of Cronbach's Alpha coefficients exceed the theoretical value 0.6, so it is obvious that the obtained data are consistently reliable.

The Spearman correlation coefficient is often described as being "non-parametric", i.e. it can have two meanings (Bachman, 2005). First, a perfect Spearman correlation exists when variables X and Y are related by any monotonic function, not necessarily known. The Pearson correlation is usually computed when X and Y are related by a linear function. The other sense of Spearman correlation being non-parametric means it is not necessary to require the probability distribution of X and Y. However, as a matter of interest, the Kolmogorov-Smirnov tests were computed and in each case the distribution has been found normal.

Generally Spearman correlation coefficients can range between negative one (-1.00) and positive one (+1.00) (Brown and Rodgers, 2002). Positive coefficients indicate direct relationships, while negative coefficients indicate inverse relationships. The larger the coefficient is, positive or negative, the stronger the relationship is, so that a correlation which is close to one, either positive or negative, indicates a very strong relationship, while coefficients that are near zero indicate very weak relationships (Bachman, 2005).

The computations of non-parametric Spearman correlation coefficients and their statistical significance for each survey statement and a set of respondent groups have been conducted by means of SPSS and the data are displayed in Table 3. In statistics, the result is statistically significant if it is unlikely to occur by chance. The significance level is

usually labeled as the *p*-value and is presented for a two-tailed test. It should be mentioned that in two-tailed tests researchers test for the possibility of the relationship in both directions while in one-tailed tests the possibility of one direction is regarded. The value of statistical significance of correlation coefficients is important for the interpretation of the relationship between two samples. In other words, its appropriate value, at least 0.05, means that the relationship is not likely to be due to chance. Larger than 0.05 values of the significance level, even if there is a correlation coefficient close to +1.00 or -1.00, mean that the probability of the significant relationship between two items is smaller than 95 % and, therefore, the relationship is likely to be due to chance.

**Table 3.** Computed Spearman Correlation Coefficients and Significance Levels for the Responses of the 1<sup>st</sup> Year Versus the 2<sup>nd</sup> Year Students.

| Survey Statements   | Spearman correlation coefficients | Significance level <i>p</i> -two-tailed |
|---|-----------------------------------|---|
| 1. While doing the tests in the Moodle area, I usually check my answers in the course book. | .677*                             | 0.05                                    |
| 2. Moodle tests are easy to do.   | .671*                             | 0.05                                    |
| 3. Moodle tests are useful for revision of ESP vocabulary or definitions.                   | .678*                             | 0.05                                    |
| 4. While writing ESP tests in class, I usually try to retrieve information from my memory.  | .816**                            | 0.01                                    |
| 5. Writing ESP tests in class is stressful and not enjoyable.                               | .949**                            | 0.01                                    |

\*Correlation is significant at the 0.05 level.

\*\*Correlation is significant at the 0.01 level.

The data in Table 3 demonstrate good correlations between learner responses at the significant levels either 0.05 (the probability 95 %) or 0.01 (the probability 99 %) with the approximated values of Spearman coefficients around 0.7, 0.8 and 0.9, which means that the relationship is not likely to be due to chance.

### Student Performance in Moodle Tasks

*Moodle* tasks in ESP included multiple choice, blank filling and true/ false exercises for each Module that students read in their course book "Understanding Psychology" by R. S. Feldman (2009). Student performance in *Moodle* exercises during the academic semester is presented in the *Moodle* area (<https://moodle.mruni.eu>) in two ways: a separate grade for each Module and, finally, as the term total grade. The great advantage of working in the *Moodle* area is that each student can see his/her grade as well as feedback to their responses immediately as soon as they have finished their tasks, i.e. whether their answers are right or wrong. In the latter case, the right answer is displayed on the screen in the *Moodle* area.

Current and total grades are electronically computed as soon as students have finished doing the *Moodle* tasks.

Grades are displayed in percentage next to each student's name in the *Moodle* area. Students' performance in *Moodle* exercises is summarized in Table 4. It can be seen that student grades vary from 72 % to 100 %. For the readers' convenience, three groups of grades are shown. The number of students who have received the grades between 72 % and 80 % is small: 3 students from the 1<sup>st</sup> year groups (8 %) and 5 students (16 %) from the 2<sup>nd</sup> year groups. The grades between 81 and 90 have been given to 15 (39 %) and 17 (55 %) students, respectively. Finally, the highest grades from 91 to 100 have been awarded to 20 (53 %) and 9 (29 %) students, respectively.

**Table 4.** Performance of the 1<sup>st</sup> and the 2<sup>nd</sup> Year Students in *Moodle* Exercises.

| Grades from to, % | Number of 1PS students | Number of 2PS students |
|-------------------|------------------------|------------------------|
| 72–80             | 3 (8 %)                | 5 (16 %)               |
| 81–90             | 15 (39 %)              | 17 (55 %)              |
| 91–100            | 20 (53 %)              | 9 (29 %)               |

Summing up the students' performance, it should be emphasized that students have performed well in the tests in the *Moodle* area, and there have been no students who failed.

### Students' reflections on *Moodle*

At the end of the semester, students were requested to give written feedback on their activities in the *Moodle* area. Each of them has written the End of the Term self-assessment in their weblogs, which can be viewed at the teacher's weblog <http://gkaval.home.mruni.eu> in the Section "Studentų darbai 2010".

Some extracts from students' feedback are presented below. Students' surnames have been withdrawn for the sake of anonymity.

#### 1<sup>st</sup> year student's reflections:

*Student A.* *Moodle* tests have advantages and disadvantages. They help to memorize definitions and concepts, however it takes plenty of time to do them.

*Student B.* *Moodle* tests are easy to do and very useful for revision. I like them very much.

*Student C.* *Moodle* exercises are good for consolidating knowledge of psychology.

*Student D.* It is my favorite activity in the ESP course. I do not feel stressed while doing *Moodle* exercises, which are very useful, and I get very good marks.

*Student E.* Generally I love doing tests. Exercises in the *Moodle* area are devoid of stress. I think they are very good for my learning.

*Student F.* It was difficult for me to do *Moodle* exercises. However I am sure they are useful for my studies.

*Student G.* I do not like using computers, that's why I did not enjoy *Moodle* tasks. Reading online causes headaches and my eyes hurt. I prefer tests printed on paper because they are good for revision.

*Student H.* *Moodle* area tasks are very valuable for revising module theme and terms. However they are not very reliable

due to faulty evaluations: I got a bad grade on some themes although my answers are correct.

*Student I.* The tests are very interesting and useful, but sometimes computer software does not accept a correct answer, which is unfair.

*Student K.* I liked *Moodle* tests because they helped me to prepare for formal testing on each theme.

#### 2<sup>nd</sup> year student's reflections:

*Student 1.* I like *Moodle* exercises, however, it's difficult to get an impartial evaluation, because the answers in exercises do not coincide with the selected terms that I looked up in a dictionary.

*Student 2.* The results of *Moodle* testing do not reflect my knowledge of ESP. I tend to ignore the right word order or miss the articles, which aren't that important.

*Student 3.* I like *Moodle* tasks because it is easy to get a good grade. Unfortunately, the computer evaluation cannot be disputed online — I had to talk it over with my teacher.

*Student 4.* I do not consider *Moodle* self-checking favorably because of its faulty evaluation. Either misspelt word or wrong word order reduced my grade.

*Student 5.* *Moodle* tasks are not difficult. However, I found some of them tricky because of my inability to select the right answer.

*Student 6.* *Moodle* tests are very useful for revising the ESP vocabulary. As I was often unable to enter the right terms, it might be better if a few possible answers were included in the computer software.

*Student 7.* *Moodle* area is helpful for checking my knowledge of the subject. I like the tasks and I am well satisfied with my performance.

*Student 8.* I like *Moodle* tests because they allowed me to revise vocabulary. They are useful in preparation for formal testing in class.

In general, majority of students expressed their positive attitudes to doing *Moodle* tasks. Only 4 students out of 69 (about 6 %) expressed their dislike for e-learning mainly because they found it tiring to read information on the computer screen. Some students attributed failure to complete assignments to their satisfaction to inability select the right term. Most students claim they enter several terms as there are a few meanings of the same expression or word in both languages, but the *Moodle* software accepts only the first entered item out of the few. This problem will be solved in the future by the technical experts who administer *Moodle* software in the University website. Moreover, misspelt entries are also rejected by the software, which caused students' dissatisfaction, although they have been encouraged to check spelling before submitting their answers.

Summing up the findings, it is obvious that the respondents are positive about e-learning and e-testing in the *Moodle* area. Major dissatisfaction of students is caused by the imperfections of *Moodle* software which fails to account for several entries to the same question. Students tend to be stressed by traditional classroom testing of the ESP vocabulary and prefer to be tested online.

## Conclusions

This research identified students' perceptions of the ESP vocabulary revision in the *Moodle* area (<https://moodle.mruni.eu>) as a tool for self-checking its knowledge. The performance in tests of the 1<sup>st</sup> and 2<sup>nd</sup> year students who specialized in psychology has been compared: no significant difference has been detected. Students' reflections on *Moodle* tasks identify attitudes to e-learning. Very few students (4 out of 69) dislike e-learning. The majority of students find traditional formal testing stressful and hardly enjoyable.

In general, respondents are content with their activities in the *Moodle* area and basically their attitudes are positive. Internal consistency reliability of responses has been determined by computing Cronbach's Alpha coefficients, all of which exceed 0.60, which means that obtained data are reliable.

Computations of non-parametric Spearman coefficients have demonstrated good correlations between learner responses at the significance levels either 0.05, i.e. the probability 95 %, or 0.01, i.e. the probability 99 %, with the approximated values of Spearman coefficients between 0.7 and 0.9. It means that the relationship is not likely to be due to chance.

Application of *Moodle* for learning ESP is highly recommended as it is less stressful, helps students to revise professional vocabulary, and their performance is

immediately evaluated, which gives students a feeling of satisfaction of having completed the task successfully.

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### Specialybės mokymas(is) anglų kalba Moodle aplinkoje

Santrauka

Straipsnyje nagrinėjamas *Moodle* aplinkos taikymas mokant(is) specialybės anglų kalbą. Tyrimai remiasi Mykolo Romerio universiteto Socialinės politikos fakulteto psichologijos specializacijos studentų apklausos, savianalizės bei testavimo duomenimis. Gauti rezultatai analizuojami naudojant statistikos metodus: taikomas SPSS (Software Package for Social Sciences) programinės įrangos paketas rezultatų patikimumo Cronbach koeficientams bei Spearman koreliacijos koeficientams skaičiuoti.

Darbe nustatyta, kad psichologijos specializacijos studentų atsakymams Cronbach koeficientų vertės yra tarp 0,7 ir 0,9 esant patikimumo lygiui 0,05 (tikimybė 95 proc.) arba 0,01 (tikimybė 99 proc.). Tokie rezultatai liudija, kad ryšys nėra atsitiktinis ir galioja ne tik mažos imties atvejais.

Studentų požiūris į e. mokymą(si) naudojant *Moodle* aplinką yra teigiamas. Kai kurių problemų interpretuojant studentų darbo rezultatus sudaro *Moodle* programinės įrangos netobulumai, kurie taisytini kompiuterijos specialistų. Darbe pateikiamos studentų refleksijos atliekant *Moodle* užduotis bei jų interpretacija. Rekomenduojama naudoti *Moodle* aplinką mokant(is) specialybės užsienio kalbą.

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## Appendix

*Part of Designed Questionnaire.*

- A) While doing the tests in the Moodle area, I usually check my answers in the course book.  
1). Completely disagree. 2). Disagree. 3). Not sure. 4). Agree. 5). Completely agree.
- B) Moodle tests are easy to do.  
1). Completely disagree. 2). Disagree. 3). Not sure. 4). Agree. 5). Completely agree.
- C) Moodle tests are useful for revision of ESP vocabulary or definitions.  
1). Completely disagree. 2). Disagree. 3). Not sure. 4). Agree. 5). Completely agree.
- D) While writing traditional ESP tests in the classroom, I usually try to retrieve information from memory.  
1). Completely disagree. 2). Disagree. 3). Not sure. 4). Agree. 5). Completely agree.
- E) Writing traditional ESP tests in class is stressful and not enjoyable.  
1). Completely disagree. 2). Disagree. 3). Not sure. 4). Agree. 5). Completely agree.