

# Using a Learning Management System in the Course of English for University Students

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**Keywords:** Computer Supported Education, Virtual Learning Environment, Self-regulated Learning, Students, Teaching English.

**Abstract:** The paper explores the potential of using a Virtual Learning Environment in teaching English to Master students at a Russian university. On the base of an e-Learning platform a kind of private website has been created with an online English course for Master students “English for Chemists and Biologists”. The course is described in some detail. The Learning Management System supplied by Moodle, an e-Learning platform, is presented. The materials and tools provided by the Moodle system are considered. The outcomes are discussed of a mixture of a traditional and online English course used to teach the university students. The author endeavours to determine whether the infusion of technology positively influences the acquisition of the English language by the Russian university students. The author claims that the pedagogical approach which involves both the technology-enhanced teaching and the face-to-face teaching is the approach which is characteristic of the 21st century teaching practice. This promising pedagogical approach helps to improve and innovate language learning in the classroom and outside the classroom.

## 1 INTRODUCTION

Today, e-Learning systems are considered to be an integral part of the teaching and learning process for higher educational institutions around the world. These systems allow for knowledge sharing and give the students access to learning materials without regard to place and time (Zanjani et al., 2013). In many cases a combination of face-to-face learning and e-Learning is used. This kind of learning is often referred to as blended learning. It is very important that it should be used so that it would support and promote positive learning experiences in students.

As is known e-Learning can take many forms and is related to the environment in which the course is based. Virtual Learning Environments (VLE) or Learning Management Systems (LMS) provide support for learners. Novosibirsk State University (NSU) has developed its own course management system. This is the Virtual Education Platform *e.l.nsu.ru* supplied by the Moodle LMS.

The LMS created at the NSU provides an infrastructure which helps to develop new methods to support classroom teaching and distance learning in the course of English for Master students. The LMS is regarded as a tool for learning and teaching.

The merits of the LMS in the educational process are as follows: 1) the arrangement of materials; 2) the organization of the students' independent work; 3) the development of assignments and tests; 4) the monitoring of activities; 5) the development of the assessment system.

We are going to examine what the course “English for Chemists and Biologists” taken by the Master students consists of and why. We are also going to consider the LMS used in the course of English as well as the outcomes of this usage.

The Master students' objective in the course is learning and acquiring an academic degree. The proposed teaching strategy leads to increased students' motivation and engagement in their study. The blended course used here creates good opportunities for teacher-student interaction, increases student engagement in learning, and promotes students' ongoing improvement.

Learning on demand is becoming a type of lifestyle in modern society. With the Moodle LMS that provides everything the students need in terms of learning in order to be successful in academic studies and work these days.

In our course of English a promising pedagogical strategy is used that is the combination of face-to-

face learning and e-Learning provided by the Moodle LMS. The resources found on the Moodle LMS are effectively integrated in the activities carried out in the course of English.

The given paper comprises three sections. In section one the significance of the LMS usage in higher education is discussed. The second section deals with the course of English taken by the NSU Master students as well as with the Moodle system implementation in this course. The five main factors that determine the LMS effectiveness are analyzed in the third section.

## 2 LEARNING MANAGEMENT SYSTEMS IN HIGHER EDUCATION

The LMSs are widely spread in academic institutions. They are useful during or in compliment to face-to-face learning sessions (Loiseau et al., 2015; Garrison, Kanuka, 2004).

Modern LMSs are developed basing upon an educative theory rationale. They provide designers with some functionalities that can be used to realise various learning activities and are not restricted to providing resource access to students (Loiseau et al., 2015).

The use of blended learning at university level has developed a lot over the last decade. By blended learning we mean the mixture of online and face-to-face learning.

Many researchers agree that blended learning is the ideal teaching concept for the future (Feshchenko et al., 2015; Schmidt, 2013; Limniou and Smith, 2010). Students have different needs, different background levels of knowledge and different learning styles. So they may be not satisfied with traditional teaching and learning environments. Implementation of blended learning is seen as a promising strategy to address this problem, since it allows a combination of traditional and e-Learning (Limniou and Smith, 2010).

In blended learning the focus is on the learners and their needs. The learners are allowed to choose what and when to blend, which means that learning is controlled by learners rather than teachers. The teacher facilitates their activity and helps them to understand what they are supposed to learn and why (Snytnikova, 2015; Garrison & Kanuka, 2004).

The LMS is considered to be successful when its users accept and use e-Learning technology. In turn, the LMS should have the following compulsory

features: perceived ease of use and perceived usefulness (Zanjani et al., 2013). Then it will be able to affect students' satisfaction.

Feshchenko et al. (2015) studied the possibilities of using the Moodle LMS in learning and teaching. They examined the merits of this technology and the relation of students and teachers to the ways of e-learning organization and compared it to the traditional face-to-face education. They concluded that both teachers and students agree that using the Moodle system is convenient enough and they willingly use the LMS. At the same time the teachers admit that to manage an e-Learning course is time-consuming. This is because they have to develop a large number of materials, including tests, independent tasks and a general evaluation system. From the teachers' point of view there are the following advantages of using the LMS: 1) the organisation of educational process; 2) the integration of the University; 3) no distraction information; 4) the possibility of student-teacher communication. The students value the following features of the LMS: 1) the possibility of student-teacher communication; 2) no distraction information; 3) ease of use.

It is believed that an LMS supports student self-regulated learning (Feshchenko, 2015; Dabbagh and Kitsantas, 2012). Self-regulated learning is defined as a student's ability to independently and proactively engage in self-motivating and behavioural processes that increase goal attainment (Zimmerman, 2000). It is a skill where students are supposed to know how to set goals, what is needed to achieve those goals, and how to actually achieve them. In order for students to self-regulate and direct their own behaviours, they should also be motivated and driven to attain goals (Dabbagh and Kitsantas, 2012; Kitsantas and Dabbagh, 2010). If they are motivated, it helps them to cope with difficult tasks.

Learning using personal electronic devices has made it possible to learn any time and any place, to acquire small pieces of information, and use every small period of time for learning while, for example, on the train on the way to the university. The technology provides opportunities to enhance students' involvement in their study, improve students' achievements, and enable more active and personalized learning (Naveh, 2015; Snytnikova, 2015).

It was shown that for the students the best use of technology in teaching would be easily accessed, well-organized websites abundant with learning materials (Naveh et al., 2010).

## 2.1 Moodle System as a Virtual Learning Environment

Moodle is a free and open-source software learning management system or e-Learning platform that serves educators and learners all over the world. Moodle is used for different e-Learning projects including blended learning in universities. Using the Moodle system private websites with online courses for teachers and learners are created to attain learning aims.

Moodle as a kind of VLE provides:

- an administration system that tracks learners' achievement and maintains records of their progress;
- attendance and registration records;
- course information about all the learning opportunities provided;
- learning resources (e.g., manuals, self-assessment tests, home assignments);
- online courses (Clarke, 2008).

There is no universal definition of what a VLE contains, so each institution may offer a different environment. The VLE is composed of those elements of the Managed Learning Environment that are intended to support and deliver the online learning (course information, learning resources, communication systems (e.g. e-mail), and online courses).

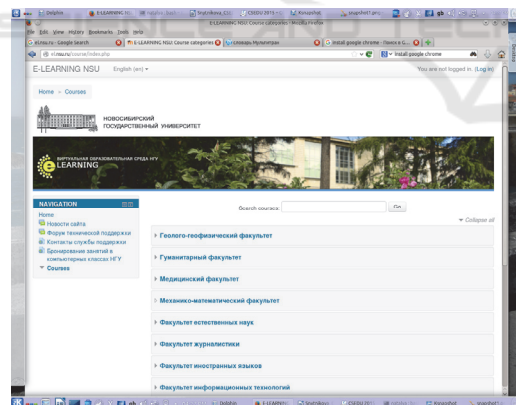


Figure 1: Virtual Learning Platform el.nsu.ru.

Figure 1 shows the home page of the VLE of the NSU. The list of links down the left-hand side of the page shows a range of facilities and functions that you might expect to find in the VLE.

## 2.2 What Makes a Learning Management System Successful

When the teachers use an e-Learning system, they

want to make their teaching more effective. In this connection the success factors of e-Learning acceptance and continued use have been studied (Sun et al., 2008; Zanjani et al., 2013). It has been stated that there are five factors which make an LMS successful. They are the teacher attitude and skills, the student attitude and skills, the LMS design, the characteristics of learning materials, and the external support.

All five factors are equally important. If a teacher is willing to engage in interactive learning, he/she can help students to get involved in active interaction on an e-Learning system. The students can adopt and accept an e-Learning system more easily if they have enough computer knowledge and some previous experiences as well as self-efficiency.

It is important how the LMS is designed. There are four characteristics that influence the intention to use such system. They are as follows:

- the perceived ease of use;
- the interactivity of the system;
- the interface design which is user-friendly;
- the information of the system which is complete and easy to understand.

As for the learning materials, it is crucial that they satisfy the following criteria:

- perceived usefulness;
- accuracy and completeness;
- performance expectancy which is referred to the level of short term perceived usefulness;
- intrinsic value which is referred to the degree an activity is delightful;
- utility value which is the relevance of a system to future career objectives or long-term usefulness;
- the collaboration level of learning materials (Zanjani et al., 2013).

Support from the educational organisation is also an important factor to be considered. The institute should provide computer laboratories, reliable networks, technical troubleshooting, and information accessibility.

## 3 ENGLISH COURSE FOR MASTER STUDENTS

The Master students who study at the NSU have a compulsory course of English. Their main goal is to acquire enough knowledge and skills for the practical use of the language in professional communication. The students develop general linguistic and communicative competences. In order

to achieve the main goal the following sub-goals are set:

- the development of skills in reading and comprehension of English texts on the students' speciality;
- the improvement of skills in appropriate translation of the texts from English into Russian keeping up to the regulations and norms of the Russian language;
- the development of skills necessary to give and comprehend oral academic presentations;
- the development of skills to write scientific papers and reports.

According to the Programme by the end of the English course the Master students have to know the basic grammar rules and the main grammatical structures of the English language that are necessary for the appropriate translation and comprehension of the texts on speciality. They should be able to:

- read and translate the texts on speciality with and without a dictionary;
- give and comprehend oral academic presentations at a scientific seminar or a conference;
- effectively interact with the other participants of a scientific gathering;
- write a report for a scientific conference or a seminar.

The students are also supposed to:

- be skilled in the standard English pronunciation;
- be able to effectively communicate using modern information and communication technologies (ICT);
- be good at self-guided work with the educational and reference materials.

The course consists of two modules: Module 1 “General English” and Module 2 “Professional English”. The course is described in the textbook “English for Chemists and Biologists – A Study Guide for Master Students” (Snytnikova, 2014). It is beyond the scope of this article to examine the course in detail. We shall focus on Module 2 “Professional English”.

### 3.1 Module 2 “Professional English”

Module 2 “Professional English” is comprised of three sub-modules. Sub-module 1 “Practical English Grammar” deals with the part of English grammar studying different grammar structures that are specific for scientific texts. The students review the grammar rules using the textbook “Practical

Course of the English Language Grammar” by T.N. Mikhelson and N.V. Uspenskaya (2009).

They have to review eight main grammar sections, which will help them to cope with the sentences in scientific texts containing complex grammar constructions. The sections are as follows: 1) the Passive Voice; 2) the Infinitive and Infinitive Constructions; 3) the Participle and Participial Constructions; 4) the Gerund and Gerund Constructions; 5) the Subjunctive Mood and Conditional Sentences; 6) the Emphatic Constructions; 7) the Pronouns and Substitution Words; 8) the Conjunctions and Relative Pronouns.

In Table 1 below you can see the list of subtopics on “Gerund and Gerund Constructions” which are to be reviewed by the students during their self-regulated studies.

Table 1: Gerund and Gerund Constructions.

Semester 1.	1. Forms of gerund.
November	2. Gerund characteristics and the forms of gerund translation.
Weeks 3-4	3. Gerund in the function of a subject.
	4. Gerund in the function of a direct object.
	5. Gerund in the function of a prepositional object.
	6. Gerund in the function of an adverbial modifier.
	7. Gerund in the function of an attribute.
	8. Gerund constructions.
	9. Gerund and participle matching.
	Self-guided written work on the topic “Gerund and Gerund Constructions”.

The grammar knowledge and skills acquired in Sub-module 1 are used by the students to read, translate, and comprehend all kinds of texts necessary for their study and work.

Sub-module 2 “Reading and Speaking on Speciality” is related, first of all, to reading the texts and doing the exercises from the textbook “Study Guide on the Development of Speaking Skills for Scientists” (Kostenko et al., 1988). The texts describe the biographies of outstanding scientists, the work of scientific institutions, etc. Thus, the students get the knowledge and skills that will help them to talk about their scientific and practical work, about the laboratory and institute they work at, about their scientific advisor, etc. The students also read scientific articles, monographs, etc. on their speciality and acquire scientific lexis and phraseology.

Sub-module 2 also includes various reference materials which are supposed to assist the students

in developing their skills in reading more effectively. Among them there the following materials:

- Rules of pronunciation in English.
- List of Latin expressions widely used in scientific texts. All expressions are translated into Russian and into English. They are also provided with transcriptions.
- Manuals “How to read Mathematical Formulae”, “How to read Chemical Formulae”, etc.
- List of phrases necessary for writing annotations of articles, monographs, etc.

Sub-module 3 “*Conference Preparation*” is dedicated to the preparation for a scientific seminar and a conference on speciality. The Master students study under the guidance of working scientists who deal with major scientific and engineering problems. Together with their senior colleagues they take part in practical and scientific seminars, workshops, and conferences as well as in writing scientific papers and reports. Thus, participating in real research work the students realize that they need to learn how to properly and effectively communicate in English both orally and in written form.

Table 2: Manual “Listening Strategy”.

Listening strategy. If you are in the audience
a) Listen carefully to learn all you can about the speaker’s topic. You will make the speaker feel at ease if you are attentive and show interest in what is being said.
b) Remember to watch the speaker, to show the speaker that you are listening, and to help to concentrate on what is being said. Maintain eye contact with the speaker.
c) Allow yourself to become involved in the report being made. Discover what does and does not work for you in the report.

In the 1st semester every student prepares for an oral presentation at a seminar and gives such presentation in class in front of the whole group. The techniques of preparing and delivering presentations are thoroughly elaborated. The manuals for speakers and listeners have been developed. They are: ‘*Listening Strategy*’ (see Table 2), ‘*Speaking Strategy*’ and ‘*Manual for speakers. Academic Presentations. 1st and 2nd Stages*’ (Snytnikova, 2013).

In the 2<sup>nd</sup> semester the students prepare for and run two conferences. At the stage of preparation we provide them with all kinds of useful information: samples of application letters, sets of phrases to be used in the reports and discussions, etc. The students

use the following manuals for speakers and listeners: “*Conference Lexicon*” (see Table 3), “*Question-Answer Techniques*”, “*Discussion Techniques*”, and “*Some hints for a successful presentation* (Snytnikova, 2015).

Table 3: Conference Lexicon (excerpt).

1. Greetings.	Good afternoon, ladies and gentlemen. Thank you for joining me today.
2. Name and Affiliation.	I am Olga Ivanova from ... University.
3. Introducing Subject.	In the course of my talk I want to talk about / tell you about / examine ...
4. Closing.	Well, that’s about it, I think. Thank you for your attention.
5. Asking for Questions.	Now, if anyone has any questions I’d be happy to answer them.

The amount of time allotted to the course of English is 102 class hours during two semesters. The Master students only have three class hours of English a week. In addition, according to the Programme the students have to dedicate at least 114 hours to the independent self-guided work in order to successfully acquire the course. At the end of the course the Master students must take a complex examination.

### 3.2 Moodle System Implementation in the Course of English

The Moodle LMS provides a set of collaborative tools for learners and teachers to support learning and teaching. We use the Moodle LMS in addition to the face-to face course of English for Master students whose specialities are Chemistry and Biology.

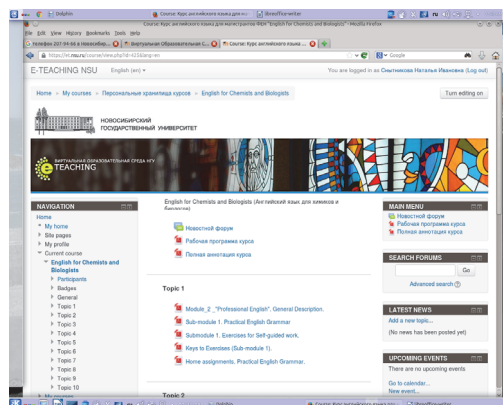


Figure 2: English Course for Master students on el.nsu.ru.

Figure 2 shows an example of the course page within the NSU Virtual Education Platform [el.nsu.ru](http://el.nsu.ru). In order to have navigated to this point you have to log in to the system using a password and user name. As far as the navigation is concerned, you need to invest some time exploring the environment and become familiar with the structure. The students have to register in order to be able to work with the course online.

They are told how the modules are organised and when the assignments are due. They also have access to the learning resources: the exercises, the home assignments, self-assessment tests, and all kinds of auxiliary information.

The course “English for Chemists and Biologists” is an online course provided by the course management system supplied by the Moodle LMS. It contains useful learning and reference materials.

First, there is a file containing the full description of the course. The students can consult it any time. There is also another file which contains the Programme of the course.

Second, in Module 1 “General English” there are the home assignments on all the textbooks taken for teaching and learning in this Module as well as the detailed schedule and teacher's recommendations on how to fulfil the home assignments more effectively. There are also some relevant reference materials, e.g. rules of English pronunciation.

Third, in Module 2, Sub-module 1 there are the exercises on practical English grammar:

1. Exercises for self-guided work with keys.
2. Control exercises to be done at home and checked in class.
3. Grammar tests.
4. Teacher's recommendations on how to work with these exercises.

Fourth, in Module 2, Sub-module 2 there are the tasks for colloquiums, the List of Latin expressions and the List of phrases to be used when writing annotations, etc.

Fifth, in Module 2, Sub-module 3 there are useful materials that help to prepare for the conference and seminar and run them. For example, they are manuals for speakers and listeners, samples of application and invitation letters, etc.

Sixth, there are teacher's instructions on how to organise self-guided work when learning English in the course.

Seventh, the detailed instructions can be also found which help to write a report for a conference.

In our online course an LMS is used, so such functions of e-Learning are implemented as

organizational, supervisory, and technical as well.

Thus, the online course “English for Chemists and Biologists” is a well-organized, easily accessed website with a lot of useful materials which is considered to be the best use of technology nowadays.

## 4 DISCUSSION

How to decide if an LMS is effective? As previously stated there are five crucial factors that determine the LMS effectiveness. They are the teacher's attitude and skill, the students' attitude and skill, the LMS design, the learning materials, and the external support.

Let us consider how the factors of the LMS successfulness have been met in our course. The Master students who take the course have competent knowledge of the ICT. So it does not take them too much effort to adopt and use the Moodle system.

It has to be taken into consideration that the Master students who study at the NSU are trained in their speciality at the research institutes of the Siberian Branch of the Russian Academy of Sciences. They take part in real research work and collaborate with working research scientists. The students conduct laboratory experiments, read scientific papers, monographs, and patents in English. They also do a lot of courses on their speciality at their institutes. They have different chemical and biological specialities and work at different research institutes. So their courses on speciality and their English classes may overlap. That is why they sometimes have to miss English classes. Moreover, the students have different background knowledge of English.

Thus, the Master students do not always attend the English classes and they have very different knowledge of English. This is especially the case as far as the English grammar is concerned. It is the practical English grammar considered above (see the description of Sub-module 1 “*Practical English Grammar*”). But they are computer-literate and the Moodle system is user-friendly. So, the students willingly use it to learn English.

The Moodle LMS in the course “English for Chemists and Biologists” supports student self-regulated learning. Different kinds of manuals and instructions help the students to set and achieve study goals properly and effectively. These manuals and instructions are used to organize and improve the self-guided work. They are provided by the teacher and are available online.

The students are motivated to achieve goals in our course because they know that their successful acquirement of English will be of use for them not only in their present studies but also in their future professional careers.

Nowadays it is very important for teachers to develop the theoretical and practical knowledge and skills required of the teachers in the 21<sup>st</sup> century. We are to develop the skills required to integrate modern technologies into daily lessons. That is why we need effective technology exposure and practice.

The design of the Virtual Education Platform el.nsu.ru employed at the NSU is rich of the media used to present the learning materials. It has a logical navigation structure and user-friendly interface design. It is rather easy to use and is interactive enough. The Technical Support Office provides the users with complete and understandable information of the system.

The NSU gives support by providing computer laboratories where the students can work with the course any time. The university provides reliable networks, so the students can work with the course any place. And there is a special service that helps to shoot technical troubles.

The learning materials used in the course satisfy the criteria mentioned above in Section 2.2. For example, the criterion “performance expectancy which is referred to the level of short term perceived usefulness” is satisfied as the materials are used by the students for the purposes of studying and preparation for the final examination. The criterion “utility value which is the relevance of a system to future career objectives or long-term usefulness” is also satisfied because the materials available online in the course of English are useful for the Master students in their present scientific work and their future careers as it has already been mentioned earlier.

The learning materials are compatible with the VLE; they are also accurate and understandable.

## 5 CONCLUSIONS

E-learning is used in higher education teaching and learning extensively. Higher educational institutions nowadays are primarily relying on traditional platforms such as the LMSs (Learning Management System). At Novosibirsk State University the Moodle LMS is used, which allows for the traditional classes to be combined with online resources. The students' perception of different learning options is evaluated. Both the students and

the teachers find that the LMS is effective as a means to increase the outcome of studying a traditional course.

In the course “English for Chemists and Biologists” the Master students are able to learn English effectively because they are provided support by the environment that helps them to learn. The students synthesize information by combining and integrating information from several sources.

The course structure is transparent to the students, so it helps them manage their time and maintain their self-motivation.

The course of English using the Moodle LMS appears to be successful. The students are satisfied with the possibilities provided by the system as well as with the abundance and variety of learning and reference materials offered in the course “English for Chemists and Biologists”.

On the one hand, the course available online in the Moodle system is of help to them when they study the language in order to prepare for the compulsory examination at the end of the course and pass it successfully.

On the other hand, the knowledge and skills that the students get are employed for some other purposes, for example, for writing the theoretical part of their Master thesis using also the learning and reference materials from the course such as “*The list of expressions for writing annotations*”. Or they can use the manuals developed for the participants of scientific gatherings for the purposes of preparation for the real seminars and conferences on their speciality and not only for the seminars and conferences held in the course of English.

In the course “English for Chemists and Biologists” the focus is on learners and their needs. The learners choose what information to take from the learning materials available online and when to take it. The teacher facilitates learning by providing the learning materials as well as supervisory and organizational help.

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