Optimization of Independent Work in Foreign Language Learning: Experience With Using Moodle

Alibi Shapauov*  
Sh. Ualikhanov Kokshetau University, Kokshetau, Republic of Kazakhstan

Magzhan Kabyken  
University Graduate School in Poznań, Poznań, Poland

Artemiy Kozachek  
Tambov State Technical University, Tambov, Russian Federation

Inna Tikhonova  
Peoples’ Friendship University of Russia (RUDN University), Moscow, Russian Federation

Sergei Kolganov  
Moscow Aviation Institute (National Research University), Moscow, Russian Federation

Vadim Kortunov  
Russian State Agrarian University - Moscow Timiryazev Agricultural Academy (RSAU – MTAA named after K.A. Timiryazev), Moscow, Russian Federation

Svetlana Bogatyreva  
K.G. Razumovsky Moscow State University of Technologies and Management, Moscow, Russian Federation

Maya Livson  
Moscow Polytechnic University, Moscow, Russian Federation

Saleh Khodjaliev  
Chechen State University named after Akhmat Abdulkhamidovich Kadyrov, Grozny, Russian Federation

Abstract—One of today’s priority tasks of higher education is training specialists that can independently search for and assimilate knowledge. The paper examines independent work as a substantial factor in self-education and learning and cognitive activities in management students and covers the organization of students’ independent work in the study of foreign languages. The study demonstrates that independent work, which used to be carried out immediately during practical classes under the teacher’s supervision, in consultations, or in the library can now be organized in a new educational environment. The authors analyze the forms, means, and types of independent work and propose ways to improve the process of foreign language learning by optimizing the work of management students as part of self-study using the Moodle learning management system. It is established that the independent work of management students in studying a foreign language using Moodle contributes to the development of important skills. These include obtaining necessary information and evaluating and applying the available information to effectively solve management problems and communicate in a foreign language. The efficiency of students’ independent work is found to increase when it is organized as a cohesive course created based on a methodologically organized educational information environment. The assimilation of educational material by means of Moodle in the organization of the educational process majorly increases the efficiency of learning, simplifies the perception of learning materials, increases motivation for foreign language learning, and positively affects its outcomes.

Index Terms—Independent work, students, grammatical competence, lexical competence

* Corresponding author: shapau@mail.ru
I. INTRODUCTION

The need for continuous improvement of professional competencies in various specializations demands that specialists have well-developed skills in information search, as well as foreign language (FL) competence. The knowledge of an FL elevates the competitiveness of future managers in the labor market and provides for more efficient use of software and information resources, thereby increasing the chances for higher income. These objective preconditions testify to the need to revise the goals, content, and technologies of the system of teaching an FL to management students to reach European and world standards. Thus, it becomes urgent to creatively search for new strategic directions and ways to optimize the methods, techniques, and means of teaching FL and incorporate them into the university educational process.

Special attention should be paid to improving the organization of independent work as a form of educational activity. This type of work is focused on self-education, self-development, and innovative work and pursues the goal of teaching students to learn not only in an educational institution but throughout their lives. Effectively organized independent work provides better acquisition of the FL, mastery of different types of speech activity, and thereby better development of the FL competence of management students (Ybyraimzhanov et al., 2022). The key to quality independent training of students is the effective organization of the educational process of studying an FL. Now that self-education has become an integral attribute of professionalism, the importance of independent work is rising. In higher education, students’ self-study and independent work, which is organized by teachers and supervised by departments, are particularly emphasized. This is a compulsory type of learning activity that plays a significant role in the final outcomes of FL education.

II. LITERATURE REVIEW

The problem of organizing independent work in FL learning is covered in several studies (Diezmas et al., 2016; Semenchuk, 2013; Ufimtseva, 2020). The features of incorporating ICT into the educational process of FL learning have also been explored by several researchers (Alan & Amaç, 2021; Wagner & Ovezova, 2019; Yunus, 2007). However, there appears to be a need for more research into the methodological aspects and efficient forms and means of organization and conduct of independent work with the use of information technology among management students in higher education institutions.

The present study relies on an approach that regards students’ independent work as one of the most vital components in the educational process that presents a synergy of different types of individual and group learning activities that take place both in and outside the classroom, without the presence of a teacher or under the teacher's guidance. Independent work is considered a form of organization and realization of learning and cognitive activity that is controlled either by the teacher or by the student themselves in accordance with the curriculum and students’ individual needs both in and out of class time and is aimed at mastering professional knowledge, abilities, and skills, as well as self-improvement (Sergeeva et al., 2021; Ramazanova et al., 2022; Zhukov & Simonenko, 2004). Furthermore, Roshchupkina (2015) views independent learning at a university as an integral component of the educational process, a method of learning, a technique of educational and cognitive activity, and a complex targeted standardized learning activity with established types and forms of control.

In the current context, training involving the information environment and modern educational technologies of distance learning and e-learning is gaining increasing popularity in universities (Gallardo Echenique et al., 2017; Shishov et al., 2021). For this reason, as believed by Elisafenko et al. (2019), it is expedient to use relevant information, communications, material, and technical support in the organization of effective independent work of students. This support is provided through multimedia and computer classrooms with Internet access, multimedia teaching materials (films, videos, audio recordings, presentations), and adapted authentic teaching and methodological literature. Students’ ability to perform independent work can be optimized by organizing it as a coherent system of a pre-prepared educational and developing information environment using physical and virtual tools. The choice of such tools is conditioned by the purpose and objectives of FL learning in the higher education institution, as well as students’ initial proficiency level (Karpova et al., 2021; Kuznetsova, 2009).

The trends of increasing accessibility and flexibility of education, particularly the development of distance learning, are gaining strength every year. This approach to education assumed both in-person learning and online classes via platforms designed to support the educational process (Gundu & Ozcan, 2017; Solovyova et al., 2022).

In this context, the goal of the present study is to analyze the features of organizing independent work of management students in the study of FL and to cover the forms, methods, and types of independent work that will help achieve learning objectives.

To achieve the set research goal, we established the following objectives:

1. to disclose the ways and methodical approaches to organizing students’ independent work using an online platform;
2. to shed light on the process of development and implementation of an electronic educational and methodological complex on an online platform.
The efficiency of independent learning of management students in FL learning using Moodle was tested via an experiment conducted with first-year students in the Management program. The experiment involved a total of 184 students with 88 belonging to the experimental group (EG) and 96 – to the control group (CG).

During the second semester of the 2021-2022 academic year, in addition to classroom lessons, EG students studied the FL independently using Moodle based on the electronic methodological complex "Distance foreign language course" (DFLC). In turn, the independent work of CG students in the study of the FL was organized without Moodle.

The experimental study was conducted in three stages.

The first stage of the experiment involved introductory control with tasks for testing the level of grammatical and lexical competence in the studied FL.

In the second stage, students carried out their independent work: in the EG – based on the DFLC hosted on Moodle, and in the CG – without using Moodle.

In the third stage of the pedagogical experiment, a final control was conducted, and its results were compared with that of the introductory control.

Statistical data processing was carried out with Statistica 7.0 software. The reliability of indicators in the groups was evaluated via the non-parametric Pearson's chi-squared test ($\chi^2$). Calculation of criterion values and confidence intervals was carried out with the significance level taken at $\alpha = 0.05$.

IV. RESULTS AND DISCUSSION

A comparative analysis of the levels of management students’ FL grammatical and lexical competence at different stages of the study is given in Table 2.
The conducted comparative analysis (Table 1) testifies to the efficiency of using the LMS in the course of independent work as part of FL learning. Data on the EG show a significant decrease in the share of students at the basic proficiency level A1 (from 43.6 to 22.8% of the total number of EG students), as well as a considerable rise in the number of students who reached B1 and B2 (from 25 to 50.8%). The CG showed no significant change in FL proficiency levels.

The value of Pearson’s $\chi^2$ test confirms the statistical significance of the efficiency of using Moodle as part of independent work on FL learning. The empirical values of $\chi^2$ (48.88) when comparing the results of EG students before and after the experiment fall in the zone of significance, significantly exceeding the critical value ($p < 0.001$). Therefore, it can be concluded that using Moodle in independent work in the study of an FL produced a significant positive effect on the level of FL grammatical and lexical competence in the EG. Furthermore, the critical values of $\chi^2$ (41.74) show a statistically significant difference in proficiency between the EG and CG. Finally, the obtained $\chi^2$ values (4.22) show a lack of statistically significant difference in the levels of FL grammatical and lexical competence before and after the experiment in the students assigned to the CG.

Thus, using Moodle in students’ independent work on the study of an FL proves to be influential and efficient.

Experimental testing of the efficiency and effectiveness of the developed DFLC in the process of management students’ independent work on studying an FL shows that EG students demonstrated higher levels of FL grammatical and lexical competence at the end of the experiment both compared to CG students and to their own results prior to the experiment.

Let us now examine the features of the organization of independent work in the EG in Moodle based on the developed DFLC.

The utilized DFLC contains such elements as a glossary, presentation of grammatical material (various forms of presentation), test assignments, and accompanying multimedia materials. A variety of exercises are provided to develop and improve reading, listening, speaking, and writing skills. The use of multimedia optimizes the visualization and illustrativeness of the training material. Such interactive elements as tests and tasks with a nested answer, multiple choice, identification of missing words, etc. are designed to stimulate students’ thinking and also function as a means of control and self-control.

Now let us dwell in more detail on the structural element of grammar material presentation, which is provided for the coverage of grammar topics. Naturally, theoretical material on any grammar topic is readily available to all users of search engines, and it is possible to do without distance learning technologies. However, Moodle allows presenting one piece of material on several different pages in different formats, for example, in the form of video explanations from YouTube; illustrative tables and pictures, where the desired topic is concisely-structured; short descriptions with detailed analysis of typical examples, exercises to practice the material learned and consolidate knowledge, where the answer to the question can be linked to the next page of the topic or content. The student can study the topic at discrete intervals and have the option to pick it up from where they left off.

For the sake of a better perception of the material, it is divided into text pages, one per screen, which does not require excessive flipping and horizontal scrolling. For easier perception of the text from the computer screen, the design of the material includes different fonts – slant, underline, and bold, as well as their location on the page. Examples, commentary, and notes are written in different colors, which increases the concentration of attention on the highlighted objects. However, all these elements need to be used reasonably and in moderation to make the perception of educational material easier and more efficient. In this way, the material will be better assimilated and consolidated, and motivation for learning will be preserved or even increased.

Thus, EG students studied theoretical materials on their own and were able to consolidate them or test themselves by completing practical exercises. If the answer was correct, the student was transferred to the next question, and if not, they had to return to the previous item. This approach allowed the students to work through the theoretical material at the proper level, and the teacher could keep track of the parts each student had completed and their progress.

Further on, let us consider more closely the Moodle elements whose application is oriented to the development of FL lexical competence. These elements include a glossary (while learning key concepts of professional terms and concepts, EG students could expand the glossary on their own throughout the DFLC and add examples of using professionalisms in specific contexts); chat (organizing online interaction between students and the teacher, as well as group activities during seminars and practical distance classes); online page (displaying learning materials, including presentations, video and audio materials, questions, and links).
Using the above-mentioned Moodle elements allowed students in the EG to form a terminological base in a specific area. For example, students were offered an assignment to analyze TV commercials in English and assess the effectiveness of the proposed advertising template. The procedure for evaluating an advertisement included viewing it and determining the means and techniques of its impact on the consciousness of consumers, including those contained in the wording. The commercials to be examined were selected according to the criterion of a voiceover by native English speakers. Thus, watching the commercial given in the assignment both improved students’ professional competence in the course and stimulated their lexical competence in the FL. To complete the homework, the student had to read the transcript of the commercial, which involved discovering the meaning of new words.

The results of our study are consistent with prior research findings. Sanchez and Hueros (2010) point out that using Moodle enables students to construct custom FL learning strategies and helps them not only gain knowledge, abilities, and skills but also to develop a certain structure of personal qualities. Yunus (2007) and Al-Mubireek (2019) confirm that the introduction of distance FL courses developed in Moodle and the presentation of knowledge as a dynamic multimodular structure formed with the involvement of all participants in the educational process facilitates the experience of independent acquisition and renewal of professional knowledge, personal involvement in this process, and responsibility for it.

Importantly, Moodle is developed according to the ADDIE model (Wagner & Ovezova, 2019), which is one of the most prominent models for the development of both in-person and e-learning curricula. The ADDIE model contains five stages of the development and implementation of a curriculum. The first stage is the analysis of the activity and identification of tasks to shape this activity and the analysis of the target audience, which involves the identification of the knowledge and skills that need to be acquired in accordance with the goals of training. The second stage is aimed at defining the sequence of teaching, choosing appropriate methods and means of teaching, and designing the curriculum. The third stage involves creating the content of the course, i.e., materials, exercises, tasks, and means of control and testing. The fourth stage is when a target group studies the created course, and in the fifth stage, the process and outcomes of learning are evaluated with consideration of feedback, after which the course is reviewed.

The necessity of utilizing Moodle as a data carrier is also determined by the fact that the volume of students’ independent work far exceeds the number of classroom hours (Merenkov et al., 2016). The curriculum implies that students work individually on the materials offered and provided in Moodle. Additionally, the course package includes recommendations for individual lessons, methodological work, practical (seminar) assignments, tests for intermediate and final control, as well as questions for self-checking and preparation for seminars. In addition, this information and communication educational platform provides an opportunity to organize continuous assessments of students’ knowledge and overall performance through testing and interactive assignments (Kuznetsova, 2009).

Distance learning in Moodle can be carried out both remotely and as an additional tool in the classroom, in particular, through tests or assignments that assume giving answers quickly (Elisafenko et al., 2019). In this respect, a considerable advantage of Moodle is the opportunity for feedback both to students and to the teacher. The platform allows asking questions directly or on forums, as well as giving or receiving consultations and providing training manuals online, in chats, or during planned video calls and meetings.

V. CONCLUSION

The study established that students’ independent work in FL learning helps them obtain such important skills in independent analysis of professional literature in the FL, acquisition of the necessary information, and effective assessment and application of initial data to optimally resolve professional problems and communicate in the FL. Moodle offers a variety of opportunities to organize the educational process, including teaching tools and a system for control and assessment of management students’ learning activities. The conducted research proves that the efficiency of students’ independent work increases when it is organized as a coherent system created based on a methodologically organized educational information environment. Moodle is mainly focused on the organization of interaction between the teacher and students. It can be stated that the presentation of the learning content by means of Moodle in the process of constructing the educational process significantly raises the effectiveness of learning, simplifies the perception of learning material, increases motivation for learning an FL, and has a positive impact on its effectiveness.

The conducted experiment comparing the levels of FL grammatical and lexical competence in management students demonstrates a positive dynamic in students who engaged in independent work in Moodle and a lack of significant positive change in those students whose independent work did not involve using Moodle.

The limitations of the study include the limited number and professional specialization of the sample of students. The fact that only management students participated in the experiment does not allow for assessing the efficiency of independent work in Moodle for other specialties, which can be considered a prospect for further research.

REFERENCES


Alibi Shapauov was born in 1973 in the Kokshetau region of the Kazakh SSR. In 2001, he earned his Candidate of Sciences (PhD) in Philology from L.N. Gumilyov Eurasian National University in Kazakhstan. He currently serves as a Full Professor and is the Head of the Department of Kazakh Philology at Sh. Ualikhanov Kokshetau University, Kazakhstan.

His research focuses on language studies, dramaturgy and Kazakh literature.

Magzhan Kabyken was born in Pavlodar, Republic of Kazakhstan, in 1997. In 2019, he graduated from the Eurasian National University named after L.N. Gumilyov in Astana. Two years later, in 2021, he completed his master's program at Kokshetau University in Kokshetau, Kazakhstan. Subsequently, he took on a role as a trainee researcher at the University Graduate School in Poznań, Poland, and earned the title of Master of Science.

His research interests span the English and Turkic languages, information systems, and international diplomacy.

Artemy Kozachek was born in 1978 in Volgodonsk, Rostov Region.

In 2005, he earned his Ph.D. in Pedagogy from Yelets State University named after I.A. Bunin, Russia. He holds the academic title of Associate Professor. Since 2016, he has been the head of the Department of Nature Management and Environmental Protection at the Tambov State Technical University.

From 2014, he has served as the Executive Director of the Association “United University named after V.I. Vernadsky” (Vernadsky United University Association). In 2022, he assumed the role of Deputy Scientific Secretary of the Commission of the Russian Academy of Sciences, dedicated to studying the scientific legacy of distinguished scientists.

His research interests span engineering and environmental pedagogy, technological and economic methodologies in education, and digital instructional methods.

Inna Tikhonova was born in Sochi in 1987.

In 2019, she earned her PhD in Philology from the Peoples' Friendship University of Russia. She currently serves as an Associate Professor at the Peoples' Friendship University of Russia.

Her research interests encompass methods of teaching Russian as a foreign language, linguoculturology, pedagogy, and folklore studies.

Sergei Kolganov was born in 1961 in Ruza, Moscow oblast, Russia.

He earned his Ph.D. in Philosophy from SSU, Moscow, in 2000. Currently, he serves as an Associate Professor at the Moscow Aviation Institute (National Research University).

His research interests encompass problems of education and e-learning, technoscience, and the philosophy of Russian cosmism.
Vadim Kortunov was born in 1967 in Moscow, Russia. In 1999, he earned his Doctor of Philosophy degree from the State Institute of Art Studies (GIU), Russia. He currently serves as a Professor at the Russian State Agrarian University - Moscow Timiryazev Agricultural Academy (RSAU - MTAA named after K.A. Timiryazev). His research delves into social philosophy, cultural studies, and aesthetics.

Svetlana Bogatyreva was born in 1969 in the village of Burkovtsy, Zhytomyr region. In 2010, she earned her Candidate of Sciences degree in Philology from Pyatigorsk State Linguistic University, Russia. She currently serves as an Associate Professor and is the Head of the Department of Foreign Languages at K.G. Razumovsky Moscow State University of Technologies and Management (known as the First Cossack University), Russia. Her research spans comparative linguistics, cognitive language studies, psycholinguistics, and intercultural communication.

Maya Livson was born in Moscow, Russia, in 1977. She earned her PhD in Economics from the Moscow State University of Printing Arts (Russia) in 2004. Currently, she serves as an Associate Professor at Moscow Polytechnic University. Her research interests encompass financial management, organizational economics, and the economics of the media business.

Saleh Khodjaliev was born in 1988 in the village of Urus-Martan, located in the Urus-Martan district of the Checheno-Ingush ASSR. He earned his PhD in 2019 from Southwest State University in Russia. Currently, he serves as an Associate Professor in the Department of Criminal Law, Procedure, and National Security at Chechen State University, named after Akhmat Abdulkhavidovich Kadyrov. His research interests encompass educational sciences, law, and history.