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MANAGEMENT OF STUDENTS' INDEPENDENT WORK THROUGH MOODLE LEARNING MANAGEMENT SYSTEM

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Abstract

In this article, the authors consider the principles of independent work management of teacher-training undergraduate students in Moodle LMS. The purpose of the article is to describe and analyze the possibilities of using Moodle to manage the sovereign work of university students. The authors of the article analyzed the viewpoints and approaches of various teachers and scientists. They described the experience of managing the independent work of undergraduate students in an electronic educational environment. The authors identified many advantages of using Moodle from the perspective of students' independent work management. The research was conducted among full-time students of Minin Nizhny Novgorod State Pedagogical University (Russia). The respondents were asked to assess the difficulty level and evaluate the effectiveness of the tasks performed in Moodle. Also, students had to indicate what types of activity in Moodle they considered to be the most efficient for the independent work, as well as highlight the benefits of using Moodle. As a result of the analysis, it was revealed that Moodle is an effective means of students' independent work management in comparison with traditional means, as it is based on the principles of differentiation and individual learning needs of students.

1. Introduction

The main aim of higher education is to train highly qualified and competitive specialists. Even though different professional competencies are formed in various specializations, an active life position, independence, initiative, flexibility and creative thinking are considered as the essential components of the professional competence of a modern specialist of any specialization. Thus, one of the priority tasks of modern higher education is to train specialists with high creative potential and ability to adapt to rapid equipment and technology changes, working conditions, to be ready to update their knowledge and improve their professional level.

Students' independent work is one of the dominant forms of the educational process aimed at developing soft skills. Implementing new forms of information communication technologies and e-learning platforms is sure to enhance not only learning but also developing a particular culture of students' activity.

In psychological and pedagogical literature "independent students' activity" is defined as a teaching method, the highest form of student learning activity (Novikov, 2013), a form of the educational process organization, stimulating activity, independence, the cognitive interest of students (Merenkov et al., 2016), pupils' performance given their maximum activity relative to the discipline which is studied, a means of engaging students in independent cognitive activity, a means of the logical and psychological organization (Pidkasisty, 1972). However, despite the differences in the interpretation of this term, most scientists recognize that the primary function of the independent work of students is to create conditions for optimal learning of educational material, developing students' mental abilities, mastering the methods of knowledge and formation of a self-education need.

The functions of students' independent activity are generally classified as the following:

– assistance in optimal learning of educational material, improving skills and abilities acquired during classroom sessions and training;

– acquisition of additional knowledge and skills;

– development of students' needs for continuous self-education, self-development and self-improvement;

– development of self-organization skills;

– formation of skills for independent professional-theoretical, practical and research activities.

An analytical review of the literature in this field suggests that the problem of forming a creative professional personality is complex and multidimensional. Russian researchers investigate different aspects of the independent work of students from various perspectives, such as:

– in the context of modern approaches to training and education (Bekoeva, 2016; Bogorodskaya et al., 2018; Kolodeznikova & Tarasov, 2016);

– as a means of improving the professional competence of students as future specialists (Markova et al., 2020; Vaganova & Ilyashenko, 2018);

– as a means of involving students in creative activity (Aksyutina, 2015; Cropley, 2008) where special attention is paid to the role and significance of the independent work in the development of students' creativity (Alexandrova & Polyakova, 2015; Dorofeeva, 2015).

Currently, in educational institutions, there is a tendency to increase the number of hours allocated for students' independent work, which is aimed at the educational outcome. According to Chelnokova and Kuznetsova (Chelnokova & Kuznetsova, 2017), the increase in hours for the independent work in the curriculum of disciplines in higher educational institutions is justified because it allows the faculty improving students' practical skills and making academic education in universities closer to the conditions of their future professional activity. In turn, strengthening the role of the independent work of students requires a revision of the educational process in the university in order to develop students' skills for independent learning and training, commitment to continuous self-development and life-long learning.

For becoming effective, the system of students' independent activities must meet the following requirements:

– the purposefulness of independent work: the tasks of the independent work should be clearly formulated by the teacher and be clear for students, i.e. students should understand the algorithm and know the techniques for performing the work;

– feasibility of independent work: the work should correspond to the psychophysiological and cognitive capabilities of students, and the degree of complexity of the task should gradually increase (Lyashenko, 2010);

– a variety of forms of independent work (individual, group, front) and types (working with a book, exercises, performing practical and laboratory work, writing term papers, preparing reports and abstracts, working with the Internet or in an electronic educational environment) (Mineeva et al., 2018);

– developing nature of independent work: the independent educational activity should be aimed at the development of cognitive abilities, an initiative in decision-making, creative and critical thinking of students;

– high motivational level: tasks for the independent work should be aimed at increasing the level of educational motivation of students due to the variety of their forms and relevant educational material used for organizing it;

– a systematic approach to choosing and designing the tasks for the independent work: the choice of the content is conditioned by the interdisciplinarity of the whole educational process;

– use of modern information and communication technologies (ICT), such as learning management systems (LMS), social networking sites (SNS), wiki technologies;

– educational and methodological support of the educational process: availability of special educational and methodological literature, including both traditional printed materials and their electronic versions;

– the rating system of training, which assumes multi-point assessment of students and provides extra points considering students' activity, on-time submissions, an innovative and creative approach to task-solving;

– availability of a submission and assessment schedule of the tasks for the independent work;

– development of the criteria and scales for evaluating the quality of the submitted work.

2. Problem Statement

In the overall structure of students' educational activities, the share of independent training accounts for at least 50% of the total training time each semester. However, despite the importance, this time is not always used rationally. All this points to the need of searching for new tools and methods to organize the independent work of students.

To meet the challenge it is necessary to deploy information and communication technologies and e-learning (Oproiu, 2015), that allow teachers optimizing and improving the educational process via virtual educational learning platforms (Lyashenko & Frolova, 2013). It can be achieved due to a variety of training resources (Amandu et al., 2013), delivery formats, as well as the application of new forms of training which can be available in such environments (Arkhipova et al., 2018).

Learning management system (LMS), Moodle provides teachers with a wide range of tools, necessary to organize the independent work of students (Ponachugin & Lapygin, 2018). Electronic training courses (ETC), developed in the Moodle system, constitute a system of interactive elements, structured into training modules by topics or sections of academic disciplines (Garrison &Vaughan, 2008).

The system provides many advantages and opportunities to enhance students' independent work: provision of students with all the necessary educational, reference and teaching materials; visualization of the information provided; widespread use of effective teaching methods and tasks of a heuristic nature, contributing to the development of students; cognitive qualities and effective management of students' independent work through to individualization of the learning process. Moodle also enables students to get operational informative, and advisory feedback which is characterized by efficiency and objectivity in evaluating the learning outcome (Colis & Moonen, 2001).

3. Research Questions

The following questions constitute the foundation of our study: 1) Can Moodle LMS be the way to organize students' self-study? 2) Is Moodle LMS a useful tool in boosting students' academic achievement?

4. Purpose of the Study

This research aims to describe and analyze the possibilities of using Moodle in the process of students' independent work at a pedagogical university.

5. Research Methods

The study based on theoretical and empirical methods of analysis: theoretical methods (selection and analysis of literature on the research topic, summarizing e-learning practices based on the information presented on the official websites of Russian universities); empirical methods (questionnaire); statistical technology (processing of survey results). Participation in the survey was voluntary and anonymous.

The study was conducted in the 2018/19 academic year at Minin Nizhny Novgorod State Pedagogical University (Russia). Twenty four full-time students, including two first-year students, 15 second-year students, five third-year students and two fourth-year students of two faculties, attended it: Faculty of Humanities and Faculty of Management and Social and Technical Services. The number of participants under the age of 18 amounted to 1 person (4.2%), 18 years old – 1 person (4.2%), 19 years old – 15 people (62.5%), 20 years old – 3 people (12.5%), 21 years old – 2 people (8.3%) and over 21 years old – 2 people (8.3%).

6. Findings

Research methods have been identified. The study used statistical methods, such as qualitative and quantitative analysis, empirical methods (questionnaire). The questionnaire included 11 questions to determine what the students' educational goals for using Moodle in self-study are and identify the strengths and weaknesses of this virtual educational platform.

First, the participants were offered to assess the frequency of using the Moodle LMS system according to a five-point scale. The answers to choose from were "I do not use it," "Seldom" and "I use it only when I get a task from the tutor/teacher", "Frequently" and "Every day." Figure 1 represents the answers of the respondents.
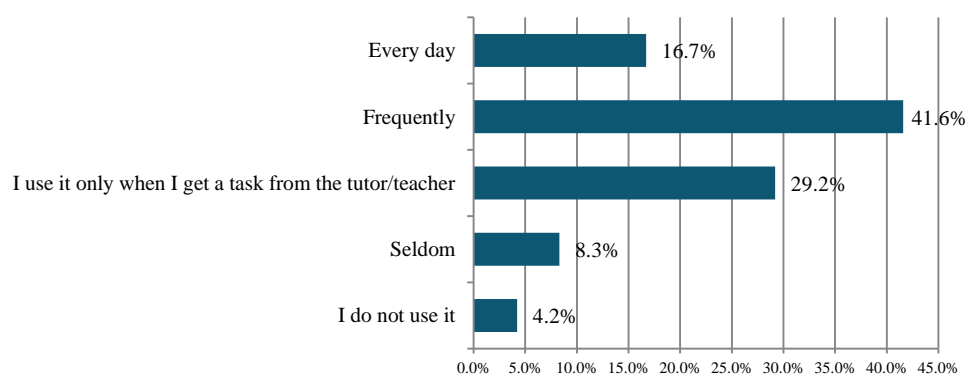

Figure 1. Frequency of Using LMS Moodle by Students (%)

Based on the results mentioned above it can be concluded, that the majority of the respondents (41.6%) often use Moodle LMS, 29.2% of the respondents enter the system only when they are assigned a task from the teacher. Only 4.2% do not employ the system at all.

The second objective of the research is to identify the complexity level of the tasks, which are available in the system for students' independent work. The evaluation scale embraces the points 1 – 5, where one refers to "not complicated", two corresponds to "fairly simple", three means "partially complicated", 4 – "complicated", 5 – "highly complicated".

Most respondents (52%) found the tasks in Moodle partially complicated, that corresponds to point 3; 40% of the students assessed them as complicated; 4% chose the option "fairly simple", and 4% voted for the option "not complicated". None of the participants found the complexity level highly complicated.

Another objective was to define the efficacy of self-study assignments in Moodle. "Lecture", "testing", "practical work" and "glossary" were named as the most widely-used types of activity assigned by the teacher. The students were to choose between the following options: "highly effective", "effective", "neutral", "not very effective" and "highly ineffective". The results are shown in Table 1.

Table 1. Assessment of Efficacy of Self-sufficient Work Assignments in LMS Moodle

№	Type of task	Highly effective	Effective	Neutral	Not very effective	Highly ineffective
1	Lecture	16.7 %	37.5 %	25 %	12.5 %	8.3 %
2	Testing	45.8 %	41.7 %	8.3 %	4.2 %	0 %
3	Practical Work	41.7 %	45.8 %	8.3 %	4.2 %	0 %
4	Glossary	25 %	33.3 %	29.2 %	12.5 %	0 %

The next stage of the research was to detect the advantages that the students recognize in LMS Moodle. The participants were offered to define what advantages of working in LMS Moodle they consider to be the most important for them individually. They were offered to choose from the following options: an opportunity to get extra grades for doing more tasks independently outside classroom time, a simplified form of the independent work, easy access to the materials from home, easy access to assignments at any time and place. The scale for evaluation students' responses included the following options: "highly valuable", "valuable", "useless" and "difficult to answer". The results can be seen in Table 2.

Table 2. Students' Assessment of LMS Moodle Advantages

№	Advantages	Highly valuable	Valuable	Useless	Difficult to answer
1	Opportunity to get extra grades	79.2 %	20.8 %	0 %	0 %
2	Simplified form of the independent work	58.4 %	33.3 %	0 %	8.3 %
3	Easy access to the materials from home	58.4 %	33.3 %	0 %	8.3 %
4	Easy access to assignments at any time	70.9 %	20.8 %	0 %	8.3 %

As for the disadvantages of the system, 88% of respondents could not reveal any drawbacks of the system. Some students still referred to technical intricacy, e.g., operation velocity, to a particular disadvantage.

In the end, the research displayed the fact whether the students made use of didactic, information and reference materials allocated in Moodle by their teachers. Most respondents (52%) actively use the materials mentioned above for their independent work in the LMS system.

7. Conclusion

The results of the study showed that most students often use LMS Moodle for self-study purposes. Students consider the tasks to be feasible to learn independently, underlining the educational and reference materials sections as convenient to use, acknowledging the need for further development.

Therefore, we can conclude that LMS Moodle is an effective means of organizing students' independent work in comparison with traditional means, the core of it being the idea of meeting individual learning preferences and styles. Enhancing independent students' activity via Moodle LMS teachers can stimulate interest, motivation, develop communicative skills as the modern generation of students, being technologically savvy, use IT daily. The results of our research prove the positive impact of LMS Moodle on the educational process. Overall, the students' perceptions of using these technologies are highly positive. Such platforms are deployed in a teaching context; they raise students' learning performance and improve the quality of education by enhancing the teaching process in general.

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