

HOW TO REDUCE DIFFERENCES BETWEEN REQUIREMENTS OF MODERN LMSS AND THEIR REAL USE

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***Abstract:** The paper provides some practical notes based on the real experience and long-term use of the university e-learning portal at the UKF. It summarizes how teachers use the Moodle and summarizes the steps and gives several recommendations, which should be led by the university management with the aim to engage the teachers in implementing new features of LMS Moodle to the learning process and encouraging students to be more active in the virtual environment.*

Keywords: e-learning, virtual learning environment, Moodle, advanced features.

INTRODUCTION

The paper tries to contribute to the debate about the features, which should be provided by contemporary LMS to be more useful for all stakeholders. The authors try to summarize the steps and describe processes, which should be led by the university management with the aim to engage the teachers in implementing new features of Moodle to the learning process and encouraging students to be more active in the virtual environment.

The rest of the paper is as follows. The first section introduces the main requirements to modern LMS and characterizes the expectations of the LMS stakeholders. At the same time, it provides a short discussion on how the current version of LMS Moodle meets the requirements to modern LMSs. The next section adds some practical notes based on the real experience of the authors and long-term use of the university e-learning portal at the UKF.

Finally, the discussion section is focused on the issues, which prevents the wider use of new features of the LMS Moodle and its applications. At the same time, this section provides several suggestions, which the administrators of the e-learning

system, as well as management of the university, should implement to utilize the LMS Moodle features, engage the teachers in implementing new features of Moodle into their e-learning courses, and encouraging students to be more active in on-line environment and prepare themselves to the era of MOOCs and lifelong learning.

1. REQUIREMENTS TO MODERN LMS

The second decade of the 21st century reaches its halfway point, and the requirements to the modern LMSs have markedly changed in comparison to the previous decades. Contemporary LMSs should be optimized to provide (Skalka et al. 2012; www.canvaslms.com, 2017):

- Self-directed learning
- Individual learning paths
- Learner-generated multimedia content
- Simple and intuitive GUI
- Availability anywhere, anytime, with any device
- Closer interconnection to the social networks
- Targeted tailor-made solutions
- Distributed and easily maintainable Cloud solutions
- Standardized integration using APIs
- Robust learning analytics

These requirements should be a part of the decision process, in which the university management tries to improve the effectiveness and quality of the education process. If the management considers the current state of the LMS Moodle deployment, it should consider not only the range of the provided features, but also their real use in the e-learning courses, the number of users, who have a real experience with these features, availability of the best practices and sufficient support and documentation. Modern LMSs prefer the simplicity and intuitiveness against features. Therefore, choosing and mainly effective using of LMS is not just about features. It's about asking the right questions and getting the right answers. The following questions can help to consider if the used LMS still provides a concurrent advantage and is prepared for the rapidly changing e-learning environment (www.canvaslms.com, 2017):

- Is it easy to use?
- Does it do what the teachers and students need it to?

- Does it provide easy mobile access?
- Is it dependable?
- Does it make teachers/admins jobs easier?
- Does it save time?
- Will it adapt to the institutional needs?
- How much can it be characterized as open, customizable, pedagogically flexible and support?
- Does it provide a reliable and modern architecture focused on speed, availability, security, scalability, and low-risk?

2. LESSON LEARNT FROM THE UKF E-LEARNING PORTAL

The e-learning portal at the UKF has celebrated ten years of its deployment on the university level. It can be used as an example of the case study, and the results will be used in the next section, in the discussion about the requirements, which should modern university e-learning solution should meet in order to satisfy all stakeholders' needs.

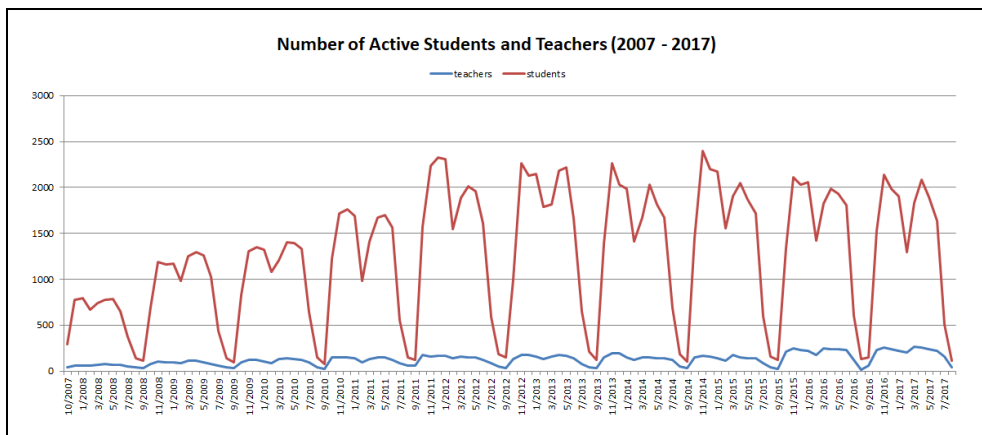


Figure 1. The number of unique active students and teachers per month during ten years.

Source: *Own Work, edu.ukf.sk*

The number of users is the first indicator, which provides the evidence of real use and usefulness of the e-learning system at the university. Figure 1 shows the number of unique students' and teachers' logins in a given month during the period of ten years. It follows that about 2000 students have logged in the system each month during the last six academic years. More interesting results relate to the number of active teachers. Figure 1 depicts that the number of teachers who use the

system is slightly increasing. Actually, the number is about 250 teachers each month during the term. Having considered this, the university is attended by around 8000 students; the regular visit rate of the e-learning portal represents about 25% of all students and around 30% of all teachers.

These numbers can be considered a solid basis for the discussion about the real preferences of the LMS Moodle users, their behaviour, and about the steps, which should be done by the university management and administrators in the near future considering the above mentioned improvements of the LMS Moodle.

The next statistical data, the overall users' activity shown in Figure 2 represents another evidence of rising activity as well as involving stakeholders in e-learning. Besides the fact, the logging mechanism has changed, it can be assumed, that the users are more active. These findings are in accordance with the rising number of unique users.

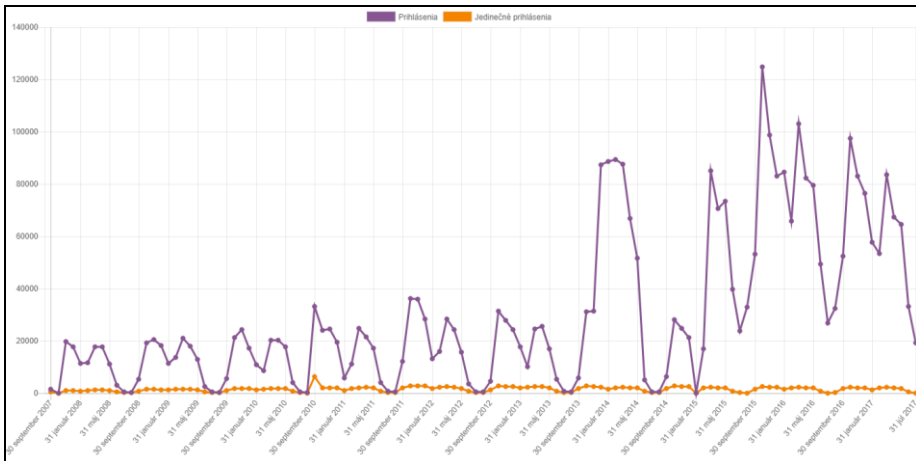


Figure 2. The overall activity of users during the last ten years.

Source: *Own Work, edu.ukf.sk*

The age structure of the users of the e-learning portal shown in Figure 3 confirms another fact that the courses are used in both forms – present and distance form. Based on this, the students in distance form represent the largest group of users (33.5%), who visit the e-learning website. This result is also surprising because the number of students in distance form is continually decreasing and the ratio between present and distance students is strongly tilted on the side of students in present form of study.

The distribution of the devices used for connecting to the e-learning portal is shown in Figure 4. It can be seen, the classical approach using computer highly dominates. Even though the Moodle mobile is promoted for download directly on the main page of the portal from its first stable version, its usage is surprisingly low.

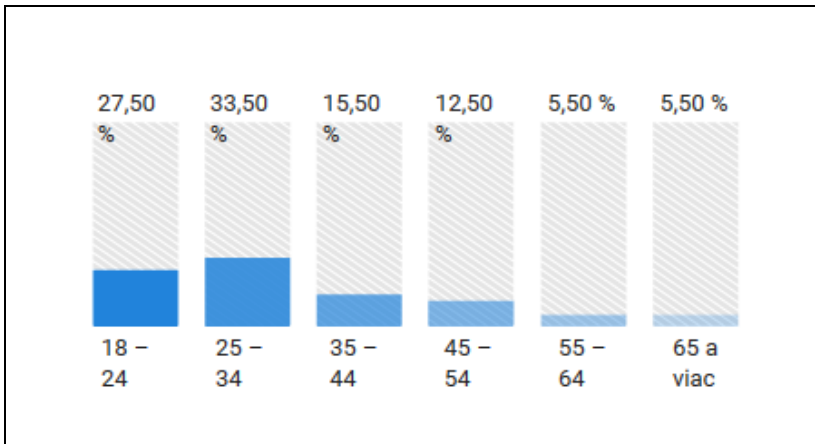


Figure 3. The age structure of the users of the e-learning portal.

Source: Own Work, Google Analytics

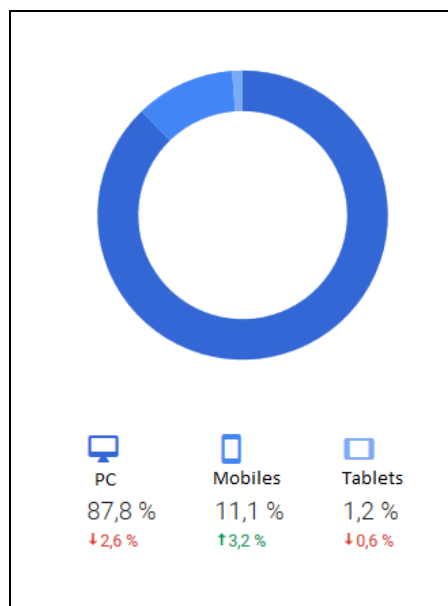


Figure 4. Distribution of devices used for logging in e-learning portal (2007 – 2017)

Source: Own Work, Google Analytics

Figure 5 uncovers the main issue of using Moodle. Even though the Moodle developers provide more and more sophisticated features focused on collaboration, interaction, and interactivity, the teachers use the same limited group of resources and activities, which were available in the system at the beginning.

The e-learning courses contain mostly resources like files, URLs, webpages, and books. The assignments, discussion, and quizzes represent the most frequently used activities. Other activities, which allow wider collaboration or support peer-to-peer evaluation, like workshops, databases, wikis are not very frequently used.

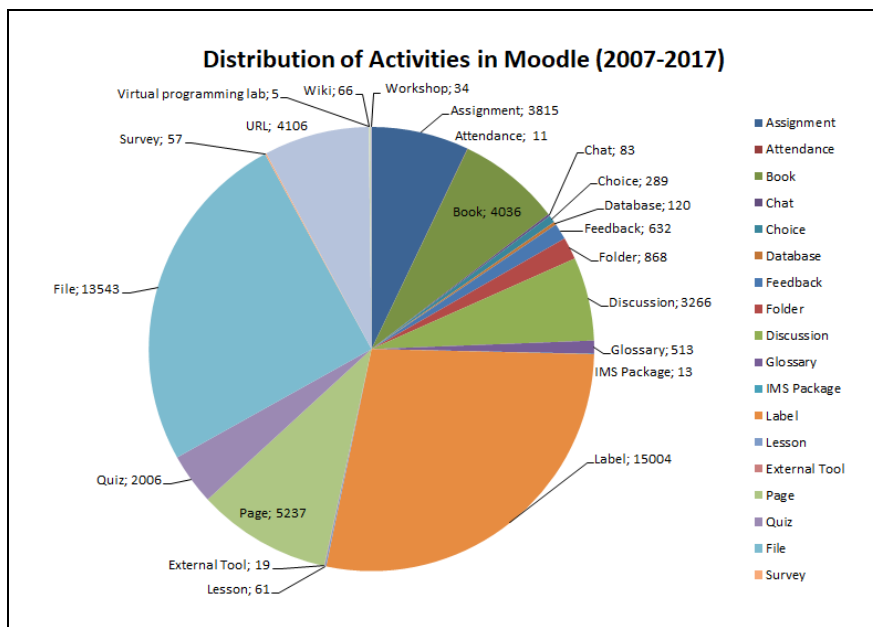


Figure 5. Distribution of activities and resources in university e-learning portal (2007 – 2017)

Source: Own work, edu.ukf.sk

A closer look at the statistical data related to the effective using of current improvements of LMS Moodle confirms the fact that the teachers and/or course creators have not discovered or used them yet.

The portal provides 1164 courses. The quizzes are available in 351 courses but used only in 273 of them. 5849 students have a real experience with them. Teachers of 144 courses use grading.

The learning progress has been allowed by the administrators for several years. Even though 517 courses have available activity completion tracking, only 37 courses use course completion. Moreover, only seven teachers use an additional block called completion progress.

New trends, which can be used in e-learning, like gamification (represented by Badges) or competencies are totally missing. They are not used in any courses.

3. DISCUSSION AND CONCLUSION

The increasing gap between the LMS Moodle possibilities and a real use at the university is evident. The list of possible activities and resources and their meaningful use in courses represent the first issue. No one can deny that LMS Moodle is packed full of amazing and useful features. However, it is impossible to use all of them all the time. Many complaints at Moodle regard the fact that despite its myriad features and capabilities it is often difficult or complicated to use them. The distribution of different kinds of activities and resources shown in Figure 5 confirms that implementing the activities with more advanced settings remains challenging for many teachers and course creators. Therefore, the effective use of these activities requires also the existence of examples of best practices, the availability of short, but easily repeatable tutorials, as well as changes in teachers' practical and pedagogical skills.

The LMS should be as easy to use and intuitive as possible because the last thing a learner or instructor needs is to be confused. Even though a lot of work has been already done to the better responsibility, navigability, and intuitiveness of the GUI, the rigid structure of the courses remains one of the main limitations (<https://www.paradisolutions.com/blog/moodle-shortcomings>, 2017).

Considering the previously listed requirements of modern LMSs, LMS Moodle satisfies most of them. It is dependable and flexible enough for adapting to the institutional needs. Simultaneously, it provides self-directed learning, creating individual learning paths, learner-generated multimedia content as well as a robust collection of APIs. It is available almost anywhere, anytime, with any device through its native applications.

On the other hand, it lacks several points like missing simple and intuitive GUI and navigation, closer interconnection to the social networks, limited dashboard functionality, and flexibility, as well as learning analytics and reporting options. Its robustness creates an impression that the system is not easy to use, does not meet the teachers and students need, and does not save time. However, it is true predominantly at the beginning. As other complex information systems, it requires time to obtain necessary skills and knowledge to be able to optimise everyday tasks and save time.

The mitigation of the above mentioned issues can be reached by systematic and coordinated work of the e-learning portal's stakeholders. The following lists provide short recommendations divided into the groups according to the target audience (Drlík and Skalka, 2011):

Recommendations for teachers:

- Experiment with the activity settings,
- Emphasize the role of student in the process of assessment,
- Make courses more social,

- Add interactivity to the lectures using Moodle Mobile and Moodle desktop,
- Put deadlines to the activities, publish them using calendar and regularly notify students,
- Track students' progress and motivate students in case of troubles,
- Gamify the course using badges, ranking, top list, stealth mode of the activities,
- Talk about the limitations of the system.

Recommendations for administrators:

- Inform stakeholders not only about the upgrade of the system but mainly about new interesting features or improvements,
- Emphasize the role of native mobile applications in communication with courses,
- Provide examples of best practices,
- Create short tours for beginners (students as well as teachers),
- Share short video tutorial from the Moodle website,
- Publish regularly some statistical reports or ratings,
- Analyse stakeholders' behaviour in line with the ethical rules and privacy,
- Continually improve user's dashboard,
- Provide feedback and support.

Recommendations for university management:

- Accept e-learning as a fact or as a tool for obtaining skills necessary for lifelong learning using MOOCs,
- Create a long-term strategy,
- Appreciate the stakeholders' initiatives,
- Develop IT infrastructure,
- Simplify the process of e-learning course development,
- Join institutional networks and share experience and best practices,
- Implement e-learning to the internal quality standards.

Considering all previously mentioned positives, it is clear, the LMS Moodle is amazing for a lot of reasons, not least because it's open source. It is in continual evolution, constantly provides new improvements and extensions, and is used all around the world to deliver e-learning to millions of students.

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