# A Comparison between LMS tools to support e-health educational activities

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#### Abstract

The objective of this study is to understand how a Learning Management System (LMS) plataform is used in a telehealth center to support two virtual learning environments focused on the education of the healthcare professionals and the students of a medical schoool. The study outcome is expected to provide indications towards choosing a better LSM for the telehelath center to support their educacional activities.

## Keywords:

Learning management system; medical education; e-health.

#### Introduction

Learning Management Systems (LMS) provide tools and functions to support teaching and learning processes, and include course management tools, online group chat and discussion, homework collections and grading, and course evaluation [1][2]. Chosing an appropriate LMS is one of the main decisions before starting an e-learning project. LMS choice can be a decisive factor in the implementation and support of the project and involves administrative management, financial costs, and human resources [3]. During the last decade, many comparisons between LMS systems have been performed, which varied from simple comparisons - e.g., between few LMS features - to complex comparisons [4][5]. The aim of this study was to assess the open source LMSs, Moodle [6] and Sakai [7], to support e-health educacional activities by conducting literature review and practical evaluation [8].

#### Methods

The evaluation focused on the features of LMS and a combination of several frameworks. The top open-source LMS options provide: Feature-rich toolsets; Enterprise-grade stability, scalability, and security; a high degree of control and flexibility; and Generally lower long-term costs than commercial options. In addition, the LMS system should be able to accommodate and manage a huge amount of information required by the medical and educational content, including different subjects, lecture notes, lecture videos, text books, videos of surgeries, and radiology images [8].

### Results

Choosing the right LMS for one's needs can be hard. Ramesh [9] has developed and presented a rubric to evaluate LMSs. He has also evaluated the LMSs Moodle and Sakai against the rubric, and arrived at a conclusion that Moodle is a better LMS to deploy for the chosen set of criteria.

According to [10], if customization, reporting and analytics, and collaboration are high priorities for e-learning initiative, Sakai is probably the best option. For the ease of use, extensibility, and a wide customer-base - as well as support and service vendors - Moodle may be ideal. Albarrak et.al. [5] indicated the maturity and advanced features in both Moodle and Sakai.

## Conclusion

The choice is based on an organization's needs. With the given variability in functionality, cost, and hosting options, the key to successfully selecting and implementing an LMS is careful planning. It's critical to evaluate your organization's needs and requirements, as well as budget, staffing, and other available resources. Careful consideration of all these factors will help to choose the best LMS.

### References

- Ceraulo, S, "Benefits of upgrading to an LMS". Distance Education Report 9, 9 (May 2005), 6–7.
- [2] Yildirim, S., Temur, N., Kocaman, A. and Goktas, Y," What makes a good LMS: An analytical approach to assessment of LMSs." In Proceedings of the Fifth International Conference on Information Technology Based Higher Education and Training. (Istanbul, Turkey, May 31–June 2, 2004), 125–130.
- [3] Akagi, A. "A escolha do LMS para projetos de EaD", website imasters.com.br
- [4] Kljun, M., Vicic, J., Kavsek, B., Kavcic, A, "Evaluating Comparisons and Evaluations of Learning Management Systems", ITI
- [5] Albarrak AI, "Designing E-learning System in Medical Education: A Case Study". International Journal of Excellence in Healthcare Management, 3 (1): 1-8, 2010.
- [6] Moodle website www.moodle.org
- [7] Sakai website www.sakaiproject.org[8] Albarrak, A.I., Aboalsamh H. A. and Abouzahra, M, "Evaluating learning management systems for University
- "Evaluating learning management systems for University medical education", Education and Management Technology (ICEMT), pp.672-677, 2010.
- [9] Ramesh, V.M.; Ramanathan, C., "A rubric to Evaluate Learning Management Systems", Teaching, Assessment and Learning for Engineering (TALE), 2013 IEEE International Conference on, 73 – 77, 2013.
- [10] Monarch Media, Inc., "Open-Source Learning Management Systems: Sakai and Moodle", Business White Paper, 2010.

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