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Assignment 1: Higher Education in Hungary: Business Programs

ETEC524 (65A)

Learning Technologies: Selection, Design, and Application

by

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Scenario Summary

Our group chose to review the Higher Education in Hungary: Business Programs as an Assignment 1 scenario. A brief summary follows:

As part of their strategic planning, the Hungarian Ministry of Education (HME) set two interrelated goals: higher enrolment in their Business-oriented programs as well as an increased completion rate among these programs. The HME was interested in attaining these outcomes specifically for their Business Mathematic courses and economic studies which accounted for twenty-eight institutions across the country. The HME devised a strategy to replace the current LMS with one that would do more than merely complement traditional education, such as those that simply digitize content and exams. In essence, a number of particulars were requested by the HME. An LMS must:

1. Afford collaborative learning,
2. Provide problem-based learning (authentic) environment,
3. Support wholly online learning,
4. Offer Web 2.0 eLearning possibilities, and
5. Be equipped with special math tools and activities.

As members of an HME task force, we were assigned to develop a rubric that would help us evaluate and select a suitable LMS.

LMS Evaluation Rubric**Evaluator:** _____**Instructions:**

1. For the Student category, use the 3-point scale to evaluate each criterion accordingly.
2. Place the aggregated values of each criterion in the bottom right-hand corner of the Student category.
3. Repeat steps 1 and 2 for the remainder of categories. (Note: Criteria in **bold** text are conferred double points)
4. The total score is the amassed values for all eight categories.

Category	Criteria	Does not meet specifications Major problems exist [0]	Partially meets specifications Minor problems exist [1]	Meets all specifications No issues exist [2]
Students	Digital Competency	Students are expected to possess a high level of digital competency in order to use functions provided by the LMS	Students must possess some level of digital competency in order to utilize all functions of the LMS.	Students with different levels of digital competency can easily access the different functions of the LMS with no issues.
	Technical Accessibility	Students can only access the LMS using personal computers	Students can access the LMS only on certain devices	Students can easily access the LMS on different devices (computer, laptop, iPad, and mobile phone)
	Accommodation to varying Learning Needs (audio, visual needs)	The LMS has only one format and does not accommodate students with different learning needs. Students can participate in minimum online activities.	The LMS provides limited formats for students to access the course content. Students can participate in different activities in the course, but not in full capacity.	The LMS provides flexible formats for students to interact with the material. Students can participate fully in the course. Students can pick from different

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		All students demonstrate their competency by completing one type of assessment	Students have limited selection of assessment tools to choose from to demonstrate their learning	assessment tools appropriate for their learning needs to demonstrate their learning
Total score for the Students category Maximum [3 x 2 = 6 points]				/6
Teaching Functions	Facilitation	The LMS does not provide any feedback function. Instructors have no ability to actively engage with students. Any communication between students and instructors are done outside the LMS.	Instructors can provide individual feedback to students but the response is often delayed. Students are able to engage with instructors by using the email function on the LMS.	Instructors have multiple options to provide timely feedback to individual students. Students are able to engage with instructors in different forms, including virtual classroom
	Hyper-mediality	LMS afford nil or limited forms of media and only allows for sequential lesson planning.	LMS affords either the use of multiple forms of media to instruct and learn OR non-sequential lesson planning.	LMS affords multiple forms of media to instruct and learn AND is equipped with a flexible format for lesson planning.
	E-portfolio	The LMS doesn't have an e-portfolio tool.	The LMS incorporates a basic e-portfolio tool that makes it possible to collect students' artefacts for assessment and presentation.	The LMS incorporates a fully functional e-portfolio tool that makes it possible to collect and present students' artefacts. Featured reporting tools are available for individual, departmental and institutional assessments.
	Assessment and	The LMS has simple testing formats (M/C, T/F, etc.), capable of generating	The LMS is capable of generating multimedia	The LMS is capable of generating multimedia summative and formative

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	Reporting	only formative assessment, and is equipped with an inflexible gradebook.	summative and formative assessments, providing limited feedback, and a standard gradebook.	assessments, providing feedback and remediation, and is equipped with a versatile gradebook.
	Customization (x2)	Instructors are not able to customize any function in the LMS. The LMS doesn't support any special tools and activities. The LMS is not compatible with any authoring tool or support interactive tools.	Instructors are able to customize limited functions existed in the LMS to match particular learning goals. Special math tools and activities can be installed by instructors for specific course needs. The LMS supports some authoring tools and interactive tools to foster collaboration.	Instructors are able to create different functions to match specific learning goals for different courses. Special math tools and activities can be installed and modified by instructors for specific course needs. The LMS supports most major authoring tools, including Techsmith and Elucidat, and interactive tools for scenario-based case discussion.
	Total score for the Teaching Functions category Maximum [(5 x 2) + (1 x 2) = 12 points]			/12
Ease of Use	Design, Layout and Navigation	UI is not intuitive and/or complicated to operate.	UI is not entirely intuitive and allows for partial control and personalization.	UI is aesthetically appealing, allows users control and flexibility, and is free of clutter.
	Orientation	User training is expected to be lengthy AND requires considerable planning.	User training is expected to be lengthy OR requires considerable planning.	User training is expected to require minimal time and effort, supports onboarding.
	Instructional Support	The LMS affords selective remote assistance and self-help resources are limited.	The LMS affords selective remote assistance and a wide selection of self-help resources.	The LMS affords on-demand and 24/7 remote assistance and it has a library of self-help resources, including tutorials, courses, and a community of

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				users.
Total score for the Ease of Use category Maximum [3 x 2 = 6 points]				/6
Cost	Initial Investment	The initial set up cost is unreasonable and exceeds the budget allowances of the twenty-eight Hungarian institutions.	The initial setup cost is reasonable and within the budget allowance of twenty-eight Hungarian institutions. However, there is no opportunity for saving for other costs.	The initial setup cost is below the budget allowances of the twenty-eight Hungarian institutions. There is some opportunity for saving for other costs.
	Student Cost	The students are required to pay additional fees beyond the tuition fee to obtain a user license for the product.	Users' licenses are included in the existing tuition fee.	The end user license is free of charge. Students are not required to pay any fee.
	Maintenance Cost	The LMS has costly ongoing maintenance that exceeds the projected budget agreed upon among the Twenty-eight Hungarian institutions.	The LMS has affordable ongoing maintenance costs that fit within the projected budget.	The ongoing maintenance costs are included with the initial investment.
	Delivery Cost	The required delivery time is considerably higher than the other LMSs.	The required delivery time is comparable to the other LMSs.	The required delivery time is less than the other LMSs.
	Staff Training Cost	The number of training sessions and cost are relatively high, exceeding the allotted time and budget.	The number of training sessions and cost are acceptable, within the allotted time and budget.	The number of training sessions and cost are relatively low.
	Total score for the Cost category Maximum [5 x 2 = 10 points]			

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Interaction and Collaboration	Collaborative and Project-based Learning Online Tools (x2)	The LMS offers limited opportunity for user interaction and mediums for communication are poorly structured.	The LMS offers limited opportunity for user interaction but has the capacity to support asynchronous and synchronous communication.	The LMS affords interactivity, supports asynchronous and synchronous communication and promotes a user's presence (monitoring, engagement, and feedback).	
	Grouping (x2)	The LMS cannot be scaled according to classroom sizes and groups.	The LMS is partially restrictive in accommodating classroom sizes and groups.	The LMS is able to accommodate varying classroom sizes and groups.	
	Gamification	Learning outcomes are not dependent on Gamification.	The LMS integrates gamification but the engagement in it is complex, dull, and/or amotivational.	The LMS integrates gamification and it fosters learner engagement via collaboration and/or competition.	
	Social Media	The LMS offers nil opportunities to integrate communication via social media.	The LMS affords users to create and share content and participate in online networking through their selected social media channels.	The LMS affords users to create and share content and participate in online networking through their all popular social media channels and integrates alternative, unique mediums to social network.	
	Common Network across all Hungarian Institutes (x2)	There is no centralized discussion forum that users can share and exchange relevant course information.	Instructors and students have access to a centralized discussion forum, in which they can exchange relevant course information.	Instructors and students at all Hungarian institutes have access to a discussion form that is centralized but separated based on assigned role, in which they can share and discuss different issues with their colleagues.	
	Total score for the Interaction and Collaboration category Maximum [(5 x 2) + (3 x 2) = 16 points]				/16

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Technological Factors	Infrastructure	The LMS isn't fully compatible with the models and designs of the existing infrastructures, including data storage, networking and security features, and system backups. Significant changes are required in most institutions to host and use the LMS.	The LMS is fully compatible with the models and designs of the existing infrastructures, including data storage, networking and security features, and system backups. But future upgrade plans for the successive LMS versions are not provided for evaluation.	The LMS is fully compatible with the models and designs of the existing infrastructures, including data storage, networking and security features, and system backup. The future upgrade plans for the successive LMS versions are provided and found to be compatible.
	Cross-platform and Responsiveness	The LMS is compatible with PC and MAC, and specific mobile devices. The interface supports only famous up to date operating systems and browsers. The site doesn't automatically respond to different platforms. The user needs to adjust the viewing range manually.	The LMS is compatible with PC, MAC, and most mobile devices. The interface supports most operating systems and browsers. The site renders responsively on most platforms.	The LMS is compatible with all devices. The interface supports all operating systems and browsers. It renders responsively on all platforms; no adjustments of the viewing range is required.
	SCORM Compliant	The LMS doesn't support SCORM learning technology standard.	With additional products, the LMS can adapt to SCORM standards.	The LMS complies with the SCORM learning standard.
	Data Aggregation across Multiple Institutions	It is not possible to effectively aggregate data across multiple institutions.	Data aggregation across multiple institutions is possible for institutions that have similar models for their majors.	Data can be effectively aggregated and made accessible between all twenty-eight institutions at consistent intervals for continuous improvement.
	Migration of Existing Courses	Insufficient migration tools exist, it is difficult to use the documentation provided.	Good migration tools are provided and well documented, but the process of migration will need additional formatting of the existing courses.	Excellent migration tools and comprehensive documentation are provided. All existing courses can be migrated without any formatting and with great ease.

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	Interoperability	Tools and content provided by an external third-party system can be accessed through hyperlinks or static representations only.	Tools and content provided by an external third-party system can be embedded within an LMS but cannot be fully integrated.	LMS use LTI (Learning Tools Interoperability) to host tools and content provided by external, third-party systems, without requiring a learner to log in separately on the external systems, and with information about the learner and the learning context shared by the LMS with the external systems.
	Technical Support and Availability	Technical support is available by phone at designated time and email. The system is unable to issue support tickets.	Technical support is available by phone at designated time and online 24/7. But the LMS is unable to issue support tickets.	Technical support is available by phone at designated time and online 24/7. The LMS issues support tickets.
	Integration with Student Information System (SIS)	Integration is challenging and will require a high level of alteration to the existing SIS platforms in most institutions.	Integration is feasible in all institutions, but will require some processing to be completed manually or in a batch process for few institutions.	Integration is seamless for the Hungarian twenty-eight institutions, with automatic updating of student and faculty lists and all rosters.
	Scalability	The installation is limited to a single server at a time. Concurrent installation isn't supported.	The LMS supports clustering and installations on multiple servers, but few installations are supporting over a thousand simultaneous users.	The LMS supports clustering and installations on multiple servers and over ten thousand simultaneous users.
	Total score for the Technological Factors category Maximum [9 x 2 = 18 points]			/18
Data Protection,	Authentication	The user is authenticated using the user id and password.	The user is authenticated using the user id and password. The	The user is authenticated using the user id and password. The LMS

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Use and Privacy Compliance			LMS enforces password strength and expiration policies across all accounts.	enforces password strength and expiration policies across all accounts. Two-Factor Authentication is required in case of several unsuccessful login attempts.
	Archives	Archiving process is mostly accomplished manually. The teaching staff cannot access the archived courses.	Good archive tools are available to support the backup of completed courses. The teaching staff can access the archived courses upon the administrator's permission.	Powerful archive tools are available to support an automatic backup of the completed courses including all students' discussions and submissions. The teaching staff can access the archived courses.
	Privacy and Data Collection	Personal data is collected and used for commercial reasons.	Anonymized personal data and learning trails are collected and used to enhance the functionality of the LMS.	Personal data and learning information collection and use are restricted for educational purposes to support the students' learning. The vendor is committed to the Student Privacy Pledge.
	SSL Encryption	The traffic between the LMS and the user's browser is unencrypted and is easily accessible to attackers.	LMS uses advanced encryption standards to make use of encryption and cryptographic codes, which helps in maintaining high-security to transmit data from a users' LMS to other platforms.	LMS uses advanced encryption standards to make use of encryption and cryptographic codes, which helps in maintaining high-security to transmit data from a users' LMS to other platforms. It also allows users to integrate their system with third-party applications without worrying about the security of data transmitted
	Total score for the Data Protection, Use and Privacy Compliance category			

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	Maximum [3 x 4 = 8 points]			
Organizational Issues	Organizational Goal (x2)	The LMS does not promote systemic matters relating to increasing enrollment and completion rates.	The LMS adopts some practices to increase enrollment and completion rates, such as promoting active learning and incentive systems.	The LMS adopts a variety of ways to increase enrollment and completion rates, such as promoting active learning and incentive systems. As well, it allows learners substantial independence and control of their learning.
	Data Analytics Capabilities	The LMS provides basic statistics and reporting.	LMS provides in depth statistics and reporting on business and economics learning outcomes that can cater problems at the course, departmental and institutional level.	LMS provides in depth analysis and reporting on business and economics learning outcomes that can cater problems at the course, departmental, institutional level and national level. It is equipped with enabling tools for longitudinal analysis.
	Operational and Structural Change	The projected changes will be significant and disruptive.	The projected changes will be minimal.	The projected changes will be minimal and will impact positively the business-oriented programs.
	Total score for the Organizational Issues category Maximum [(3 x 2) + (1 x 2) = 8 points]			/8
Total rating score for all categories Maximum [6 + 12 + 6 + 10 + 16 + 18 + 8 + 8]				/84

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Articulation of Logic

Our rubric includes eight categories. Each category has a set of criteria. For each criterion, we offered measurable qualities that the LMS must comply with to achieve one of three standards. Weight factors were assigned at the end of each criterion. As one of the primary objectives of the HME is to adopt an LMS that affords learners an authentic, collaborative, and participatory environment. Furthermore, as existing LMS's in the country only complement traditional education, the HME also wanted an LMS that is specifically tailored to courses in Business Mathematics. Considering these predilections, we gave extra weight to such inclusionary criteria. Each category is followed by a formula by which the evaluator will use it. All that is needed is to multiply the category score by the weight. The results need to be summed to attain the total score of the LMS. The total value will be used to facilitate the decision of the assigned task force.

The SECTIONS model presented by Bates (2014) inspired most of the categories of the rubric. On the one hand, it addresses the significant elements we would like to include when choosing an LMS that best fits the unique needs of the institutions. On the other hand, it considers the characteristics of the LMS from the perspectives of its three actors in an LMS: the instructor, the student, and the administrator. We specially selected elements that supported active forms of teaching and learning. For example, given research has indicated that instructors' social presence plays a vital role in encouraging active learning in students, especially in online learning (Baker, 2010). Our rubric includes elements emphasizing the interaction between instructors and students. In the same way, recent research demonstrated that gamification embedded in the LMS enhances students' academic achievement and competency (Chen, Huang, Gribbins, and Swan, 2018). Drawing on the connectivist theory that argues that individuals learn and work better in a

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networked environment (Siemens, 2005), we also embedded criteria that assessed whether or not the LMS has the capability to integrate social media and serve as a centralized network across all the Hungarian institutions.

An essential consideration when selecting an LMS is to involve the perspectives of all stakeholders (Santaniello, 2017). Our group decided to add the “Technological Factors” and “Data Protection, Use, and Privacy Compliance” categories to enable the evaluation of the LMS from the technical side. The criteria of the groups can support evaluating the LMS compatibility with the infrastructure presently in use and the feasibility of realignment if necessary, a main concern for the IT staff (Santaniello, 2017). For management and administration, we added the “Organizational Issues” category to ensure that the LMS can benefit the organizational goals as well as decisions. One key criterion in the category is “Data Analytics Capabilities”, research indicates that data-driven decisions can enhance organizational output and productivity (Long & Siemens, 2012).

With over 500 LMSs on the market, making a decision about which LMS to choose can be complicated (Santaniello, 2017). In this assignment, we presented a rubric and rationale we believe can assist the HME in evaluating their options. Our work is tailored to the needs of this particular scenario; however, many parts can be adapted to evaluate LMS’s in other contexts.

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