White Paper

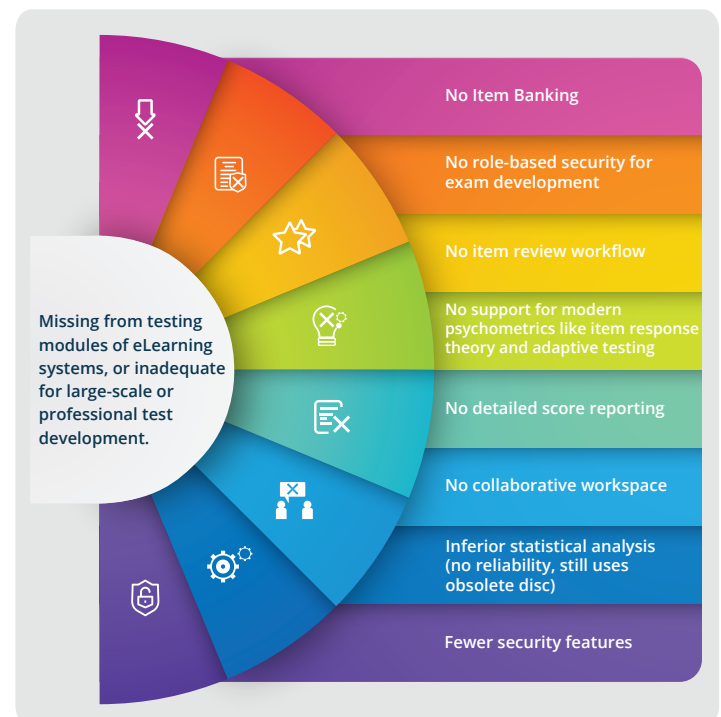# Disadvantages of Using Learning Management Systems for Assessment

Learning Management Systems (LMSs) are software platforms designed to manage courses, typically with an online component or completely online. LMS platforms provide rudimentary methods for testing examinees as part of the learning process. However, because such platforms were not designed specifically for testing, they are incapable of many professional level aspects of testing, and are often only appropriate for small-scale or low-stakes applications. This paper reviews some of the reasons.

Learning Management Systems

The use of web applications for managing online instruction has revolutionized the eLearning industry. Web-based systems for eLearning are designed to provide a powerful way to organize educational content and materials, support discussion forums, deliver assignments, manage class lists, and calculate grades. As these systems are designed for such purposes, the functionality provided is typically quite excellent.

But while these LMS platforms typically include some functionality for examinations, users must remember that the platforms are designed for classroom use. That is, they are not designed for anything more than small-scale exams at a classroom level, especially since assessment only represents a small fraction of their intended functionality. So while the testing functionality serves it purpose at classroom level, it is quite inferior to systems that were actually designed for testing. This is especially true for exams that occur on a large scale (hundreds of examinees or more) or require a professional level of sophistication namely things like item response theory (IRT) or computerized adaptive testing (CAT).

The following list provides some of the important pieces that are missing from testing modules of eLearning systems, or are inadequate for large-scale or professional test development.

Missing from testing modules of eLearning systems, or inadequate for large-scale or professional test development.

- No Item Banking
- No role-based security for exam development
- No item review workflow
- No support for modern psychometrics like item response theory and adaptive testing
- No detailed score reporting
- No collaborative workspace
- Inferior statistical analysis (no reliability, still uses obsolete disc)
- Fewer security features

Systems with complete testing capability are rare, and can only be designed by experts with a Ph.D. in the science of assessment, psychometrics, in concert with expert software engineers. FastTest is an excellent example of such a system. This paper reviews some of the shortcomings of eLearning platforms from the list above, and contrasts them to professional-level systems.

No item banking

Item banking refers to the use of a database approach for developing items and using them in tests. All items are stored in **item banks**. Tests are then constructed by selecting items from banks. An item does not need to be entered each time it is used in a test, as it already exists in the bank, and therefore simply needs to be pulled. Entering items each time they are used is not only extremely inefficient, but also not able to track the item development process, or record on which tests the item was used. In addition, important information is not stored for each item, such as statistics, keywords, reference information author, and date created.

 Professional testing systems, on the other hand, provide extensive item banking functionality. Items are stored in a flexible folder system, and associated with a wide range of important information.

No role-based security

LMS platforms typically have roles for the educational side (instructor, teaching assistant, viewer, student) but lack roles specific for the test development process, such as item writer, item reviewer, bank manager, and test builder. Professional testing systems such as FastTest provide such role-based security for managing test-related personnel.

No item review workflow

An essential aspect of the test development process is item review. Professional assessment systems will allow administrators to create a custom workflow, and ensure that items go through it as a quality assurance process. This can include assigning items to users, setting due dates, pulling input such as Angoff ratings, and sending emails.

No support for IRT/CAT

Item response theory (IRT) is the modern paradigm for developing, scoring, and analyzing exams, providing solutions to many of the problems in its predecessor,

classical test theory. Computerized adaptive testing (CAT) is the test delivery method of the 21st century, where exam difficulty is tailored to the ability of the examinee. This provides numerous benefits (see other White Paper), the most important of which is that tests are typically only half as long.

Both IRT and CAT require a massive amount of psychometric expertise, and are therefore rarely available in software that is not professionally designed by a psychometrician.

No detailed score reporting

An important part of testing is the feedback given to examinees. Professional testing systems typically provide customizable and individualized score reports. Users can design the score report to look any way they like. Moreover, detailed results such as subscores and scaled scoring can be utilized. This is not the case in many LMS platforms.

No collaborative workspace

The combination of item banking and role-based security provides a collaborative workspace for a wide range test development personnel to efficiently develop test content according to best practices in psychometrics. LMS systems obviously provide a collaborative space for the virtual classroom, but not for the development of defensible tests.

Inferior statistical analysis

Statistical analysis of test data is absolutely essential for evaluating item and test quality. No statistical analysis means that items of poor quality are not identified or removed, and there is no information regarding reliability or validity. Because systems developed for testing usually include expertise from psychometricians, they obviously provide more sophisticated statistical analysis.

Testing systems should at the very least provide these statistics for each item: the proportion of examinees endorsing each response, the point-biserial correlation for each response, and the overall item mean and point biserial. In addition, they must provide test-level statistics, the most important of which is internal consistency reliability. LMS platforms will often be lacking important statistics, or provide obsolete versions (e.g., the top-bottom discrimination index). They most

certainly won't provide IRT analysis.

Organizations that put forth a professional effort on exams will also typically utilize external statistical analysis programs such as *Iteman* or *Xcalibre*. A testing system should also be able to easily export raw response data for use in such software.

About ASC

ASC (assess.com) provides online assessment software that is designed to help manage the entire test development and delivery process. Our platform leverages AI and automation to make it easier to develop high-quality exams and deliver with modern psychometrics like IRT and CAT.

Security option

Professional testing systems place an emphasis on security in test delivery, as this is an important component of validity arguments. Professional assessment platforms will provide functionality for randomization, linear-on-the-fly testing (LOFT), small availability windows, site management and proctoring, and navigation controls.

Account management & configuration

User Acess & Permission

Automated Psychometrics

Item Banking

Reporting & Exporting

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1

2

3

Automated Item Generation

11

TEST DEVELOPMENT & DELIVERY

4

Essay Marking

A

10

5

9

6

Item Review

8

7

Remote Proctoring

Test Assembly & Publishing

Paper Delivery

Online Delivery

For more information, please visit www.fasttestweb.com or assess.com

assess.com