

USING R TO CREATE ASSESSMENTS FOR COURSE MANAGEMENT SYSTEMS

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The purpose of our poster is to show how assessment can be incorporated into Course Management Systems (CMSs) and can offer valuable feedback for students. With regard to the creation of learning materials, we have developed an efficient assessment creation strategy (using the R statistical software program) for Desire2Learn. However, users will not need knowledge of R to realize benefit from the final functions of our assessment creation strategy. Currently, CMSs have several technical limitations that inhibit their use in the construction and management of statistical and mathematical CMS assessments. The methodology we are using has made a significant contribution in resolving these limitations. We have used this methodology to construct large question pools that cover many of the commonly taught topics in an introductory statistics methods course (e.g. descriptive statistics, probability, inference, and regression). More importantly, these questions have a built-in added benefit of real-time feedback for the student.

We are currently using this method in our Introduction to Business Statistics course, which has multiple sections taught at Western Michigan University. In addition, these classes usually consist of between 25-30 students per sections. The fall semester of 2013 was the first semester we implemented our new system.

There are great benefits for instructors with our methodology. The R functions that we created will allow instructors and/or instructional designers to efficiently create large question pools that can easily be imported into CMSs. Currently, this is a time consuming and monotonous task using available CMS technology. These R functions also allow us to change certain aspects of each story context, giving each student a unique problem to solve. Furthermore, we have used these R functions and homework problems to create our exams. Because we have such a large question pool, we are easily able to create multiple forms of each exam.

Our poster will highlight the process of creating homework assignments from our R functions all the way to the created homework assignment in the CMS.