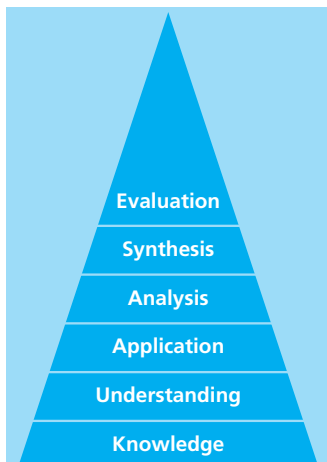


UB Teaches and learns

by Powhatan Wooldridge, School of Nursing and Christine Kroll, Graduate School of Education

Using UBlearns Assessment Tools to Promote Student Learning

Have you ever thought about whether your students think about your course outside of class time? Ever wondered if they have actually read the textbook prior to listening to your lecture on it? Do your students get together to study or discuss course content on their own time? All of these questions have crossed our minds and we have found that using some of the options in Blackboard on UBlearns can help guide students to achieve higher level learning objectives. At the very least, the functions in UBlearns can be used to ensure that your students will have read and thought about the assigned readings *before* coming to class. That alone can greatly improve their learning and your teaching effectiveness.



Benjamin Bloom's Taxonomy

Although all teachers would like to have their students read the assigned materials before coming to class, we believe that this may be particularly important for teachers who want to achieve higher level learning objectives by using the assigned readings as a springboard for further discussion. Bloom's Taxonomy defines six levels of cognitive learning objectives. The basic levels are knowledge and understanding. At these levels, students learn facts, definitions of concepts, and the like. These are building blocks for achieving the higher level objectives of application, analysis, synthesis and evaluation.

We believe that most college students are capable of achieving knowledge and understanding through reading the text, but that they often have trouble achieving the higher level objectives without help from the instructor. To the extent that this is true, it suggests using classes to build on the knowledge and understanding that the student has acquired from reading the assigned material, not merely helping the student to organize and assimilate it. We both use such an approach, although we use it in somewhat different ways.

In addition, we use different UBlearns features to foster higher level learning objectives, and to ensure that students come to class prepared. There are both quantitative and qualitative approaches available through features of UBlearns that will ensure that the instructor will be able to build in class on student learning that has already taken place outside the classroom.

Quantitative Methods to help students achieve knowledge and understanding

by Powhatan Wooldridge, Ph.D., School of Nursing

Perhaps the simplest way to ensure that students assimilate assigned readings at the knowledge and understanding levels is to use the Blackboard on UBlearns Test Manager to give objective quizzes *before* class. Students are told that they must read the material assigned and take an "advance quiz" *before* they come to class. In my experience, this greatly increases the percentage of students who have read, and to some extent assimilated, the assigned text material before coming to class.

Before I used advance quizzes, I found that only a small minority of students read the assigned readings before class. When I used advance quizzes, almost every student did the quiz before class. The Test Manager can be set to create separate tests for each student and attempt by drawing the questions for each test randomly from "pools" of questions from the assigned chapters. The purpose of the advance quizzes is primarily to foster learning (formatively), and only secondarily to assess the quality of the student's performance (summatively). In order to follow a class discussion that focuses on the higher learning levels, students must first read the material and assimilate it at the basic knowledge and understanding levels. Assigning quizzes to be taken before class solves this problem. While the quiz scores count towards the student's final mark, they are not weighted heavily in the student's final grade.

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UBlearns System Update

As the spring semester begins to wind down, System and Application Administrators are planning summer updates. Our schedule is an ambitious one, including the installation of application updates, functionality enhancements to the Blackboard Instructor Web Interface (BIWI) and a Course Removal process targeting courses older than, and including, the Fall '03 semester.

The UBlearns Support Team watches system resources, like disk space, to ensure that UBlearns remains stable while delivering current course content to faculty and students. Continued growth of UBlearns requires that we review the current policy of unrestricted retention of courses on the system. The most recent review has indicated that we have a "space crunch," and therefore must limit the number of courses on the system and initiate a one-time selective Course Removal process.

Throughout the summer, individual course instructors affected by the Course Removal process will receive an email including a list of courses targeted for removal and a detailed description of the process. All affected courses removed from the UBlearns system will be stored as zip files by the Application Administrator. Removed courses will be available for reinstallation for 15 months. Instructors should contact ublearns@buffalo.edu for assistance.

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I allowed multiple attempts by the same student, with the score on each attempt replacing the previous score. If the student chose to redo the quiz, the student was not certain to do better on the retake, but repeated attempts did tend to improve the student's score (as well as the student's learning of the material). This made it relatively easy for students to score high on the quizzes. In effect, the quizzes had the status of required homework that was to be graded, but with a much lower time demand on student and instructor than the traditional qualitative approaches to homework would have required.

The advance quiz approach is most practical for courses that use a text for which objective questions have been provided by the publisher. If these are provided in electronic form, they can easily be uploaded directly into the Test Manager. They should be placed in separate question pools for each chapter. The exams can then be constructed quickly and graded automatically in UBlearns. The amount of student time required to take a short quiz should be about 10 to 15 minutes (exclusive of the time spent reading the required material). The amount of time required to set up each short quiz from the question pools should be less than 30 minutes, once the instructor has learned how to use the Test Manager.

There is an interesting issue here for teachers who aspire to achieve high taxonomical learning levels in their students. Such teachers seldom rely on the kind of objective tests provided by publishers. Questions targeting learning at the higher taxonomical levels are likely to be in the minority. In addition, those questions that attempt to test learning at the higher taxonomical levels are often poorly written and/or ambiguous. As a result, most of us tend to rely instead on term papers, essay tests, or specially designed objective tests that we create ourselves. Ironically, this is actually an argument that favors the use of the test materials provided by publishers for the advance quiz approach. Since high learning level instructors are unlikely to want to use the publisher's test materials for major exams, using them for advance quizzes has little or no down side.

Using short answer essay quizzes to teach application & analysis

The short answer essay assessment feature of Blackboard on UBlearns is well suited for teaching application and analysis skills. In contrast to the advance quiz approach, these exams should be given *after* the techniques involved in application and analysis have been demonstrated and discussed in class. They should still be thought of as primarily for formative purposes, rather than summative purposes, however. In my research methods class, I present a brief synopsis of a research study and its findings, then asked short answer essay questions about such things as validity threats, interpretations, statistical issues, and practical application issues.

When using such quizzes for formative purposes, it is important to keep in mind that their primary purpose is to foster learning, not to evaluate the student's level of achievement. Still, it is important to provide constructive criticism, and also to provide model answers for the student to think about. Fortunately, UBlearns has the option to provide the student with model answers that can be seen only after the student submits their answers.

Setting up a series of essay exams of this kind can be rather time consuming. I strongly suggest that the same essay exams be used every semester. I grade primarily on the amount of effort expended rather than the technical excellence of the answers. It is also important to provide the student with individualized formative feedback, and once again, I suggest that these quizzes not be weighted heavily.

Summative testing, and testing for synthesis and evaluation

My preference is to use in-class exams for summative testing. For summative evaluations, it is important to be sure that the student is presenting his or her own work, and in-class exams are much better for that purpose. I do believe, however, in using previous exams for the formative essay exams discussed

above. This lowers student anxiety and increases the perceived legitimacy of the in-class exam. As for evaluation and synthesis, I believe that the term paper is still the best place to require students to demonstrate those skills.

Qualitative Methods Encourage Critical Thinking

by Christine Kroll, Ph.D., Graduate School of Education

UBlearns provides a number of tools to facilitate student learning and conversations between class sessions. In addition to posting scoring rubrics within the Course Documents section of UBlearns, I also begin the course with a diagnostic assessment of intelligences. The survey results are used to group my students. They remain within these groups for the entire semester. Each week a broad topic is introduced and each group is assigned a specific area within that topic to explore. They then develop presentations based on their facts and understanding of the material. Preparation for these in-class presentations occurs within the UBlearns Discussion Board. The following is a step-by-step account of the process:

Diagnostic Assessment

When using the UBlearns survey tool, I ask students to complete a 40 question "Survey for Discovering your Strongest Intelligences" (Weber, 2004). This survey identifies areas of student strengths. For example, results may reveal that a student's learning style is visual-spatial, verbal-linguistic, or mathematical-logical. I use the results to create small heterogeneous groups within the context of the larger class (50-70 students). When completing group work, students decide amongst themselves what portion of the project they would like to complete in the context of the overall assignment. Students who are strong in the "verbal-linguistic" area might choose to present the information gathered by the "mathematical-logical" learners. Although all students will be responsible for knowing all information, theoretically, the heterogeneous groups allow more students to complete course work using their strengths.

Group Discussion Forums

All students are expected to complete assigned readings before arriving to class. In response to the question/problem I have posted, stemming from the reading, they begin to research and formulate a response/solution which will be presented on campus to the entire class.

I use the following grading scheme to encourage students to work together as a group. Each student receives two grades for their presentation:

1. Many Grades to One Student: Online discussion boards and group meetings outside of class are peer reviewed by other group members using a six question reverse coded survey.
2. One Grade to Many students: In-class group presentations are graded solely by the instructor. All group members receive the same grade, thereby creating a dependency upon the group to present a solid response to the assigned question/problem.

Formative Assessment - Bringing students into the process

Students are asked to complete an online learning journal entry at regular intervals throughout the semester. They are asked to provide feedback on how the class is addressing their learning needs and offer suggestions for how things might be changed to clarify or improve their comprehension of material. Students have been surprisingly candid with their feedback and suggestions, which have become an integral part of the course. Student feedback helps me to identify potential problem areas before they become crisis areas.

Objective Assessment—Time for a Test!

At regular intervals, students complete tests in the course. The tests are currently taken in class; however, they could be delivered using the UBlearns assessment system. Tests cover at least 3 learning units and are all multiple choice/multiple answer. Students are tested on all material presented in the

UB Teaches and learns

by Powhatan Wooldridge, School of Nursing and Christine Kroll, Graduate School of Education

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book, online, in-class by the instructor and their peers. After each student presentation, students are allowed to hand in two or three questions they believe should be on the test. The instructor may or may not include these questions on the test.

Summative Assessment - Reaching learning objectives & outcomes

The final course project is a paper which will summarize the students' understanding of course materials. It is a short paper (2-4 pages); however, it must be a reflection of their own ideas and thoughts. The paper should also include citations to peer-reviewed literature supporting their viewpoints. Students are asked to submit their assignments via the *UBlearns* Digital Dropbox.

Additional Ideas for using *UBlearns* outside of class time:

1. Debate—Post a controversial question within the *UBlearns* Group Discussion Boards. Next, divide the class (or group) into two teams, one called Team Pro, the other called Team Con. Give each team a definitive stance they must defend (regardless of their own opinions).
2. Competition—Divide groups by gender, interests, vocation, etc. and provide guiding questions on the Group Discussion Board. Inform groups of extra credit points if they provide a more comprehensive answer to the question than their counterparts to spur competition, which often drives students to a higher level of achievement.
3. Anti-“googling”—Post a general question and ask students to refrain from “googling” key words from the Internet. Once ideas have been generated, ask them to choose one or two. They should then spend time researching their idea(s). Move them beyond Google to the library by asking them to provide citations that support their statements. It opens up a whole new area of reading for them—peer-reviewed journals!
4. Students as Experts—Ask your students to become the expert for a given week and present in class using the *UBlearns* Discussion Board. Make one

or two students the “expert” for a given week in your course. It is their task to read ahead and become well-versed on the subject matter. While you still create the discussion board question, it is the “moderator’s” responsibility to keep the conversation moving, check sources, and inspire their peers.

5. What’s going on in other groups? Many of the ideas above require the *UBlearns* group function. To ensure students are seeing all sides of topics, create a “summarizer” assignment. This works very well with a moderator assignment. You ask the moderator from group 1 to summarize the group 2 discussion board posts and vice versa. They will post the summaries within each group giving all students the opportunity to learn from the entire class. This exercise also allows the moderator to take full ownership of the unit they were assigned and empower them to continue research in that area.

UBlearns is an excellent tool to keep your students engaged outside of class time, supporting student-centered learning. Whether you decide to employ quantitative, qualitative, or a combination thereof, we hope these strategies will help you explore all that *UBlearns* has to offer. We believe using these strategies have improved our courses and set the stage for higher level thinking, transcending time and space, fostering critical thinking.

In addition to pushing students to higher level learning objectives, it allows and empowers students to take ownership of their own learning experience. As reviewed, students may reinforce or remediate concepts through objective testing and discussion board participation. *UBlearns* extends the physical learning community allowing students, who are often rushing from class to class, to get to know each other in an alternative setting. It provides an archive of student thoughts and ideas, to be revisited as often as necessary, in order for each student to gain knowledge and understanding and to further apply, analyze and work toward the higher learning objectives of synthesis and evaluation.

Reference: Weber, Ellen. *MI Strategies In The Classroom and Beyond Using Roundtable Learning*. (Allyn and Bacon, 2004)

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Perspectives

by tatiana de la tierra, Information Literacy Librarian, Arts & Sciences Libraries

The Library Skills Workbook via *UBlearns*: A Smoother Information Literacy Ride

A General Education information literacy requirement for UB undergraduates, the *Library Skills Workbook* has been around, in various incarnations, since 1980. In the olden days, before today’s hi-tech world, it was administered on paper and had to be completed in the library, where books and the card catalog reigned. Now, with the proliferation of electronic resources and a library that exists in a virtual space as well as a physical one, the *Library Skills Workbook* is available online. I have been involved with the *Workbook*’s online re-visioning since 2000. The most recent development—administering the *Workbook* via *UBlearns*—is the most promising.

The *Workbook* is a Web-based tutorial divided into five sections: Using the Library, Doing Research, Finding Books, Finding Articles, and Using the Internet. Information-literate students who know how to do research using library and Internet sources are the ideal in an academic setting. But students are not fond of the *Library Skills Workbook* requirement, and librarians experience complications with the process. Some students resist the *Workbook* and try to get exempt from it. Many complete it at the end of their studies, when it is least useful to them. Many cheat because changing the answer key on a frequent basis is difficult due to technological limitations. The *Workbook* is labor intensive for the Libraries. When students complete it, their results are received via email and each test has to be graded manually. Students are emailed individually with their results.

If they fail, they have to redo it, and these answers have to be graded and, once again, students have to be individually informed of their results. Once they pass, the Libraries manually update their DARS records. Sound tedious? It is.

This is where *UBlearns* comes in. Offering the *Workbook* on *UBlearns* has great advantages for both students and the Libraries. Instead of having one 25-question document, the *Workbook* is divided into five sections that can be completed independently of each other. If students fail a section, they redo the section they missed, not the entire test. They also get immediate feedback and they get their score for each section. The only time they need an individual email from the Libraries is when they need to redo a section, or when they need to have an Information Literacy Session (which is required if they fail twice). Cheating is also drastically cut, since each question a student gets is from a pool of randomly rotating questions. While the DARS records still have to be input manually (since *UBlearns* and DARS currently don’t communicate), the task of processing the *Workbook* is significantly diminished. It’s also easier for librarians to detect and fix faulty questions because we can view the failed sections in the grade book. And for students who are familiar with *UBlearns* from other classes, it’s a much smoother ride.

For the second semester in a row, in a pilot project coordinated by the Libraries with the assistance of Robin Sullivan in the Educational Technology Center, the *Library Skills Workbook* is being administered to a select group of students via *UBlearns*. So far, students have given this version of the *Workbook* high ratings, and librarians are also pleased with the results. If all goes well, the online version currently available to most students will be a thing of the past, thanks to *UBlearns*.

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Meet Your Support Staff

Don Stein

User Services



Don Stein joined the Professional staff at User Services in 2002. Don provides in-class training for instructors on the use of UBlearns and is a liaison for UBlearns use in the Public Computing Sites.

Don is also a Student Access Manager for the Public Computing Sites. In this role, he supervises the operations of the Bell, Lockwood and ResHall computing sites. Don also teaches workshops on Microsoft Excel in the User Services workshop program.

Don is a native of Western New York and lives in Buffalo. In his free time Don likes to bike and travel.

From the Editor

The UBlearns Support Team looks forward to the summer as a time to consider improvements to UBlearns service, support and functionality. Support Team members will be attending the annual Blackboard Users Conference to learn what's new, to interact with colleagues from other Blackboard subscribing institutions, to learn how faculty are using UBlearns to enhance instruction, and to give feedback to Blackboard developers on needed improvements to the software.

Summer is a great time for UB instructors to build course content for fall courses. The Support Team is available to assist instructors in preparing course documents and in customizing their UBlearns course site. Contact etc@buffalo.edu for individualized assistance. We are continually adding new "tips and techniques" to the UBlearns site in the form of best practice documents. To view all our user support documentation, go to ublearns.buffalo.edu > select the Faculty tab > Best Practices.

Currently available:

- Best Practices for PowerPoint
- Best Practices for Streaming Video
- Best Practices for End of Semester Procedures

During the summer months, the ETC continues to offer group and individualized training and course development to all UB faculty and staff. Contact us at etc@buffalo.edu to schedule a consultation on your instructional support needs.

— Carole Ann Fabian

Workshops

To view schedule and register for upcoming UBlearns workshops,

GO TO > etc.buffalo.edu > Instruction > Workshops



Educational Technology Center

University Libraries
212 Capen Hall
Buffalo, NY 14260-1680



UBlearns contacts:

For software and technical support, contact Systems support: ublearns@buffalo.edu or 645-2803
For course development and instruction, contact Faculty support: etc@buffalo.edu or 645-7700

UBlearns Update is a newsletter for faculty and staff to share knowledge in the area of teaching and learning using UB's centrally supported course management environment. **UBlearns Update Newsletter** is a joint publication of UBlearns Advisory Group, the UBlearns Support Team, the *Educational Technology Center*, and *Instructional Technology Services*. To submit articles for consideration, contact our editor Carole Ann Fabian, Director, Educational Technology Center at cafabian@buffalo.edu or 645-7700 x2.

Updated March 22, 2005

End of Semester Procedures

This document outlines how student enrollments in UBlearns are handled at the end of the semester, how to deal with student incompletes, and how to save grades and user submissions (discussion board postings, chat archives, assignments, papers submitted through the Digital Dropbox, etc.).

Basic Recommendation

Instructors are responsible for providing access to UBlearns for students with incompletes. Instructors should make copies of grades and user submissions for their records.

Discussion:

Student enrollments

Approximately three weeks after the last day of classes, enrollments in all UBlearns course sites are disabled. This makes the course unavailable to students, TAs, Course Builders and Graders.

- Disabled users no longer have access to the course site.
- Disabled users no longer receive course communications (email, announcements, grades, tasks and calendar dates).
- Disabled-user data remain linked to the user record but are hidden.
- Disabled users cannot be re-enabled via the control panel. See *Incomplete Report Form* to have a student re-enabled: ublearns.buffalo.edu/bin/incomplete.pl

Instructors will continue to have access to course content only, not to student submissions or grades. This applies only to courses enabled on UBlearns using the BIWI (Blackboard Instructor Web Interface). Courses enabled using the BIWI have course IDs formatted like 200406_123456 (representing the year, month and registration number).

Students with an incomplete

If you have students with an incomplete (final grade) and would like them to continue to access the course, please see the *Incomplete Report Form*: ublearns.buffalo.edu/bin/incomplete.pl

- What courses are affected?
 - Official credit-bearing courses which have been enabled for UBlearns by the BIWI.
 - Courses for the current semester after the last day of classes.
 - Courses for previous semesters starting with Fall 2003.
- What students are affected?
 - Students officially registered for the course.
 - Students enrolled in courses for previous semesters starting with Fall 2003.

- When would you use this form?
 - To give a student access to a course site after the end of a semester.
 - To extend student access to courses that use the same course site for more than one semester.

Students manually added to a UBlearns course by the faculty (or administrators) are not visible on this form.

Retaining copies of grades and user submissions

If you wish to keep copies of user submissions from your UBlearns course, you need to follow these instructions.

Save gradebooks

- Select "Gradebook" from the course control panel.
- Select the "Download Grades" button.
- The page will refresh. Read the instructions and select the "Download" button.
- Once downloaded, the file can be viewed in a database or spreadsheet program, such as Excel or Access.

Note: Browsers other than Internet Explorer for PC will display the gradebook data in the browser. Copy the information and paste into a word processing program. Save the file in plain text format and use the .csv extension.

Save discussion board postings and chat archives

Since UBlearns uses frames, you must first open the discussion board text or chat archive in a new window. Do this by right clicking on the link to the discussion board or chat archive and select "Open in new window."

To view all messages of a discussion board forum on a single screen, click the "show options" tab, then click "select all," and "collect." Messages will display in the order they were posted. A drawback to this is that you lose the threaded nature of the messages.

Then choose one of the following options:

- Save as text: Highlight the text to save. Select Edit > Copy. Open a word processor and paste the text you copied. Save the file.
- Save as a Web document using Internet Explorer: Select File > Save As. Change the Save as Type menu to Web Page (HTML). Name the file and save. You will be able to open the file in a word processing software.
- Print document: Open the view you would like to print. Select File > Print.

Save Assignments submitted using the Assignment function

To save files submitted using the Assignment function, go to Control Panel > Gradebook. Select the title of the gradebook item for the assignment you wish to download. Follow onscreen instructions.

Save papers submitted to the Digital Dropbox

To save files submitted through the Digital Dropbox, go to Control Panel > Digital Dropbox. Select the documents you wish to download, and follow onscreen instructions.

Questions or Comments

If you have any questions or would like to report additional information about this issue please send an email to UBlearns@buffalo.edu. Thank you.

by Athena Tsembeles and Thomas Slomka

Preparing Tests for Delivery via UBlearns

While UBlearns offers a complete assessment area for creation and delivery of tests, there are alternative test-creation methods worth exploring for those who find UBlearns assessment area too time-consuming or restrictive for their needs. This article presents a summary of current test-creation options.

Respondus

The University has acquired a license for a powerful test creation and management software, Respondus 2.0. Respondus is an easy to learn graphical software application that can help you build tests and surveys offline and then upload them to UBlearns later. With Respondus, you can create, manage and store tests, surveys and question sets (a.k.a. "pools") for all of your courses on your own computer. Connect to UBlearns when you are ready to import and release the tests to your students. Respondus is a Windows application, but can work from the MAC OS using emulation software, such as Virtual PC.

Instructions and download of Respondus are available on the UBlearns Welcome page in the Faculty Updates area, or by going directly to: ublearns.buffalo.edu/ublearns/0Respondus.html

Importing Questions into UBlearns

UBlearns accepts externally created question files that conform to a specific file structure which follows certain rules for each question format. Questions and answers are often separated by the use of the TAB key. Acceptable question formats include any combination of essay, ordering, matching, fill in the blank, multiple choice, multiple answer, or true/false. Text editors such as WordPad, Notepad, TextEdit or even MS Excel can be used to create a question file. Each question type has its own simple formatting rules. Generally, each question begins with the question type and all the Blackboard question types are supported.

Sample Multiple Choice Question

Sample multiple choice question created in MS Excel.
(MC indicates multiple choice)

MC	The roses are __.	red	correct	blue	incorrect	orange	incorrect
----	-------------------	-----	---------	------	-----------	--------	-----------

Sample multiple choice question created in NotePad.
Note: When using any text editor, be sure to turn the word wrapping format option off.

MC The roses are __. red correct blue incorrect orange incorrect

When constructing question files, organizing questions by level of difficulty, point value, and question type provide the most efficient use of this method. Presently, the inclusion of correct/incorrect feedback directly into the question file is not a feature of this process. To add feedback to uploaded questions you need to use the edit test canvas and add the feedback question by question.

To import questions you first open the Pool or Test Manager from the course "Control Panel" and build a new pool or test. Once the pool or test is created "modify" the test. In the "Add" tool bar use the pull down menu to select the "Upload Questions" option and select "GO." You will be asked to browse your computer for a questions file to import. You will also be asked to assign a "Points per question" value. After the import is complete you will be returned to the "modify" test canvas and the questions imported will be shown after the last question in the test.

Import a pool into Blackboard

Blackboard has specified a format for the import and export of test pools. Many publishers offer tests formatted for Blackboard. It is a good practice to build pools first and then create tests from the pools. To import a pool select the "Pool Manager" from the course "Control Panel" and choose the "upload pool" option from the "Add" tool bar.

Quiz Generation Tools

In researching this article, we found an automated quiz generation tool on the Web created and supported by staff at Wytheville Community College. The site provides step-by-step instructions and allows you to create a test on the fly, then exports your question file in a packaged file (.zip). This file can then be imported into UBlearns following the "importing question" steps outlined above.

www.wcc.vccs.edu/services/blackboard/

SCORM

The Sharable Content Object Reference Model (SCORM) is supported by Blackboard and is accessed through the document creation canvas in any document area of your course. Once in the document creation canvas you can choose "SCORM Content" from the "select" menu at the right of the "Add" tool bar. You will be asked to browse your computer for a SCORM package and upload it. You can choose options for the package: the method of presentation, whether to track use of the package, whether to include the package in the Gradebook, and whether to force completion of content.

To create a Sharable Content Object (SCO) you will need to use a development tool of some kind. Among the more popular tools today are Captivate and Authorware, software available from Macromedia, who also has SCORM-exporting tools or methods for many of its other products. You can also find many SCOs that have already been created for a variety of topics by searching the Internet. Many publishers are starting to produce SCORM compliant content with their textbooks as well.

The Advanced Distributed Learning Web site has a complete history of SCORM and many helpful links and resources including a tool for locating certified products and third party development tools.
adlnet.org/index.cfm?fuseaction=scormabt

Questions or Comments

For instructional support in building tests contact: etc@buffalo.edu.