

# Innovation in e-Assessment: Exploring a Multidimensional Tool

Rosemary W. Skeele  
Instructional Design and Technology Program  
Seton Hall University  
USA  
skeelero@shu.edu

Vivienne B. Carr  
Instructional Design and Technology Program  
Seton Hall University  
USA  
carrvivi@shu.edu

Joseph Martinelli  
Instructional Design and Technology Program  
Seton Hall University  
USA  
martinjj@shu.edu

Nancy B. Sardone  
Instructional Design and Technology Program  
Seton Hall University  
USA  
sardonna@shu.edu

**Abstract:** Blackboard is our university's management system for online course delivery. To simplify data collection and aggregation for various accreditation reports, we have researched various online tools that can be accessed through Blackboard. We were excited to discover a multidimensional, rubric-based tool called Waypoint that allows us to provide detailed evaluation feedback to students about specific assignments while at the same time permits us to construct rubrics, align objectives with professional standards and core curriculum standards, collect and aggregate data for accreditation reporting, and design assessments for the acquisition of core curriculum skills by all undergraduate students at the university. These are our reflections after using this tool for the past year.

## Introduction

Data derived from rubrics were used to develop the specialized professional association (SPA) reports for our media and technology programs when we applied in 2003 for accreditation by the National Council for the Accreditation of Teacher Education (NCATE). The Association for Educational Communications and Technology (AECT) is our SPA and serious development ensued to align our rubrics with AECT standards. Rubrics are defined as rating scales – as opposed to checklists – that are used with performance assessments (Mertler, 2001). An abbreviated example of a rubric can be found in Figure 1. Rubrics for these programs are constantly updated as we define areas of change and improve our system for aggregating data. At the last accreditation, paper-based rubrics were used for collecting data about students and programs, but it was a time-consuming process. We used spreadsheet software for data analysis, but since preparing that accreditation report, we have been experimenting with online tools that promise more efficient data collection and aggregation.

Additionally, we are in the process of developing online versions of our media and technology programs, so we needed a method that would allow us to assess students in an online learning program as well as a classroom-based model. Our university is committed to using Blackboard as a course management tool and distribution system for

our online courses. We have integrated accreditation reporting with our Blackboard-based electronic portfolio system and were seeking the same type of seamless integration for the assessment process. While waiting for Blackboard to implement its Outcomes System, we researched various online tools to determine which could be accessed through Blackboard to facilitate data collection and aggregation for reports. We selected an online rubric generator that uses Blackboard's application programming interface called Architecture for Interactive Data. Currently, we are experimenting with a product called Waypoint that seems to exhibit good product integration with our current Blackboard suite. This paper is reflective of our process to find appropriate standards-based tools for assessing student work while simultaneously providing a more efficient means to collect and aggregate data for program, course, and student evaluative purposes. We begin by discussing the evolution of the current evaluative process embarked upon by this university, and end with our practical views on the use of the new found tool. Other universities may benefit from this information as they prepare for their own form of public accountability – whether a national accreditation or an annual review – where the results of student achievement are a critical factor in determining both the level of individual achievement and the overall quality of the program and school.

<b>Electronic Research and Technologies Webliography Rubric</b>					
	<b>Target 4</b>	<b>Highly Acceptable 3</b>	<b>Acceptable 2</b>	<b>Moderately Acceptable 1</b>	<b>Unacceptable 0</b>
<b>1. Number of Web Sources/ Annotations AECT Standard 2: Development</b>	Selected and annotated 20 or more Websites related to the topic using at least 2 sentences for the annotation.	Selected and annotated 15 Websites related to the topic using at least 2 sentences for the annotation.	Selected and annotated 10 Websites related to the topic using at least 2 sentences for the annotation.	Selected and annotated 5 Websites related to the topic using at least 2 sentences for the annotation.	Selected and annotated fewer than 5 Websites related to the topic using at least 2 sentences for the annotation.
<b>2. Quality of Web Resources AECT Standard 2: Development</b>	All Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.	Most Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.	Some Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.	Few Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.	No Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.

Figure 1. Segment of a rubric

## Assessing College-Level Learning

A dynamic shift began to occur in education in the early 1990's with the call for a more literate workforce, able to make critical judgments and decisions. A curriculum framework reformation occurred that required students to apply critical thinking skills in the study of content areas. In response to the reform, new methods of assessing students were required, which introduced the use of more comprehensive assessment strategies (alternate assessment) in classrooms (Kuhs et al., 2001).

Alternate methods of assessment have become an umbrella term for anything other than norm-referenced, selected response tests. Alternative assessment is described as any type of assessment in which students *create* a response to a question or task. Examples include short answer questions, essays, performances, demonstrations, exhibitions, projects, and portfolios, which can provide a showcase of students' abilities, talents, interests, and potential (Barootchi & Keshavarz, 2002). Evaluating alternate forms of assessment, however, can be difficult. Yet, without such evaluative measures in place, student learning may remain uneven and individualized, depending upon the standards set by varying faculty in their programs.

As many colleges and universities prepare for national accreditation and reaccreditation, the results of student achievement become a critical factor in determining the overall quality of the school and its educational program. With the curricular move away from norm-referenced testing, standardized achievement measures are either not used or formulated for program or unit evaluative purposes. As a result, unit assessment may not be possible at a respectable level of accountability without the use of specialized tools for assessment.

## Methods and Tools for Assessing College-Level Learning

The confluence of powerful technologies of computers and network connectivity (Beekman & Quinn, 2006) has brought new tools to college educators that can change the way they communicate and manage course assessments. Turnkey e-learning solutions such as Web-based *Blackboard*, *Chalk & Wire*, *LiveText*, and *FolioTek* are widely used on college campuses worldwide to manage courses and associated content. They all provide evaluation systems that offer easy creation and management of norm-referenced assessments as well as score, store, aggregate, and disaggregate the resultant data. Although the grading portion of these offerings can accommodate assessments other than norm-referenced, there is no automatic tool to grade essays, short answers, projects, or portfolios. The instructor has to score these types of assessments manually. In addition, without a pre-established evaluation framework in place for these forms of assessments, the results could be uneven among students.

Evaluating alternate forms of assessment continues to be a focal point in higher education reform. As such, rubrics have emerged as an evaluation tool. Rubrics set benchmarks and provide a standard for fairly evaluating all students on the same assignment (Stevens & Levi, 2005). Rubrics are used to help students understand the link between the learning objectives and the desired outcomes by articulating the required elements of a successful assignment (Stevens & Levi, 2005). In addition, rubrics not only provide a vehicle for timely feedback, they can also prepare students to use the detailed feedback for improvement purposes. When properly designed, rubrics are meant to encourage critical thinking and facilitate communication with others who are working toward the same goal. At an aggregate level, they can be used as a standardized tool for program and unit assessment purposes. In this use of rubrics, “the aim is not to grade the individual but to assess the degree to which the entire program is meeting its goals” (Stevens & Levi, 2005, p. 109).

Rubric assessment tools are useful in that they provide the needed pre-established evaluation framework for alternate forms of assessment; however, there has been no automatic method to aggregate the results until now. One joint solution that combines standardized feedback with aggregated results is the *RubiStar/Waypoint/Blackboard* connectivity offering. *RubiStar* is a Web site that provides template driven, static rubric design. *Waypoint* is a software program that extends the *RubiStar* rubric by providing the ability to change the rubric from a static to a dynamic Web-based format. The *Waypoint* system is the interface in which the user can select predetermined standardized feedback. The assessment results would then be posted in the grade book feature of *Blackboard*. The results are also available for class, program, and unit reporting purposes.

## Exploring Waypoint

Waypoint, a product of Subjective Metrics, is an online tool to assess and evaluate student products. In 2003, Andrew McCann, an Auxiliary Instructor in English and Philosophy at Drexel University, founded Subjective Metrics as an outlet to develop and market Waypoint. McCann, who has a background in Web design, was dissatisfied with the electronic teaching tools available so he created Waypoint as a way of bringing consistency to electronic assessment methods (Subjective Metrics, 2007). McCann’s strong ties with Drexel University paved the way for Waypoint to enter the halls of higher education. Drexel, in 2005, piloted Waypoint to develop Association to Advance Collegiate Schools of Business (AACBS) accreditation data.

Waypoint was originally developed to provide writing instructors with an efficient, online tool for evaluating and providing ongoing feedback to college students (Innovation Philadelphia, 2004). With a built-in evaluation system, Waypoint can provide data on the strengths and weaknesses of a particular student or a group of students. It is designed to increase an instructor’s productivity by decreasing the time required to grade projects and provide feed-

back to students (Bradley, 2005).

In the fall of 2006, the Waypoint Building Block was released for use within the Blackboard Learning Management System. It is a tool that can enable educators to better evaluate, assess and provide timely feedback to their students, while providing detailed data that can assist in course content analysis and reflection.

## **Making Connections – Waypoint and Rubistar**

Waypoint has partnered with Rubistar, a well-known, online rubric generator and an established productivity tool for teachers. Importing rubrics created in Rubistar to Waypoint changes them into an interactive, web-based evaluation. In Waypoint, feedback to students can be easily included, stored and quantified. Rubistar is a familiar friend to most educators, and has proven to be an attractive way to lure college of education faculty to use the Waypoint product. Rubrics help teachers be more efficient and more effective. Add to the mix a template-based online rubric-maker like Rubistar, and we have a tool that not only aids in the physical construction of an assessment, but one which offers numerous tools to devise effective instructional assessments through a highly usable and easy to understand template. This is combined with a database of prepared rubrics to use as examples or “starter” kits for growing hybrid rubrics that are tailored to particular course and student needs (Key, 2006).

Rubrics are grouped into two categories: holistic, in which the endeavor is reviewed as a total project; and analytic, where the assignment is assessed as a sum of its components. At Seton Hall University, we are a media and technology program, so our projects tend to model real world instructional and curricular design projects, which tend to be large and include many assessable components. For this reason our rubrics are analytic. We want to discover and track student weaknesses within these projects to recommend change and meet student needs.

Students of all ages complain that they don't really understand what the teacher wants with regard to academic assignments. This fuzziness is a weakness with regard to both the student's performance and the instructor's ability to fairly grade student work. The responsibility for defining quality student performance lies with the instructor. Course expectations and requirements need to be clearly delineated and communicated to the learner. For several years we have been creating and refining rubrics for our technology products to accomplish this goal. At first, we created rubrics to measure student achievement and aggregate data, but soon we were pleasantly surprised that student performance improved when rubrics were introduced before a project was begun. As a next step, we used the same rubrics for students to peer review each other's products before submitting a project for grading. Each project and assignment began and ended using the rubric.

Rubistar is a powerful tool in which the user can utilize previously designed generic rubrics or customize them to fit specific task requirements. Users of Rubistar can copy data from rubrics previously created in word and paste into the Rubistar created rubric. Rubistar users can create unique rubrics, and once saved, they can be electronically linked to the Waypoint software application. Rubrics provide educators with a tool that can assist them in the designing of an assessment product that will yield consistent results. Assessment, especially formative, is dynamic and ongoing, and constantly under the scrutiny of content standards. Education, both on the K-12 and higher education platforms, is data driven by standards, which are often seen as the foundation for accountability (Thinking About, 2007). Waypoint provides the application tool in which standards can be applied to individual rubric assessment categories. It can take the data generated through rubric evaluation and use it to compare, match and fulfill requirements found in both state and national standards.

One of the key factors when learning any new technology is the intuitiveness of the application. Is the learning curve too high for the average user or will they become frustrated prior to becoming comfortable with the use of the tool? What makes this Waypoint-Rubistar marriage such a success is the ease in which the rubric is linked to Waypoint. After creating a rubric in Rubistar, a code number is generated that can be copied and pasted into Waypoint providing the link to the generated rubric. The largest obstacle to overcome in Waypoint is the somewhat confusing set of menus and buttons that need to be learned after the rubric is loaded into the application. After a few attempts, those buttons and dropdown checklists are easily mastered. Areas of selections that can be modified include grade/level and the weight of each scoring level.

One of the most intriguing features found in Waypoint is the ability to select elements from rubrics entered into the application. Information presented (Hawkins, 1997) in an essay for the George Lucas Educational Foundation’s (GLEF) Learn & Live resource book and reprinted by Edutopia in 2005 stated, “As educators strive to guide students to meet higher standards and gain deeper understanding, teachers need to become expert with a new set of skills and knowledge.” Waypoint and Rubistar have enabled the educator to build, modify or construct rubrics from a selection of elements used in previously constructed or imported rubrics, which can result in stronger assessments of student work products.

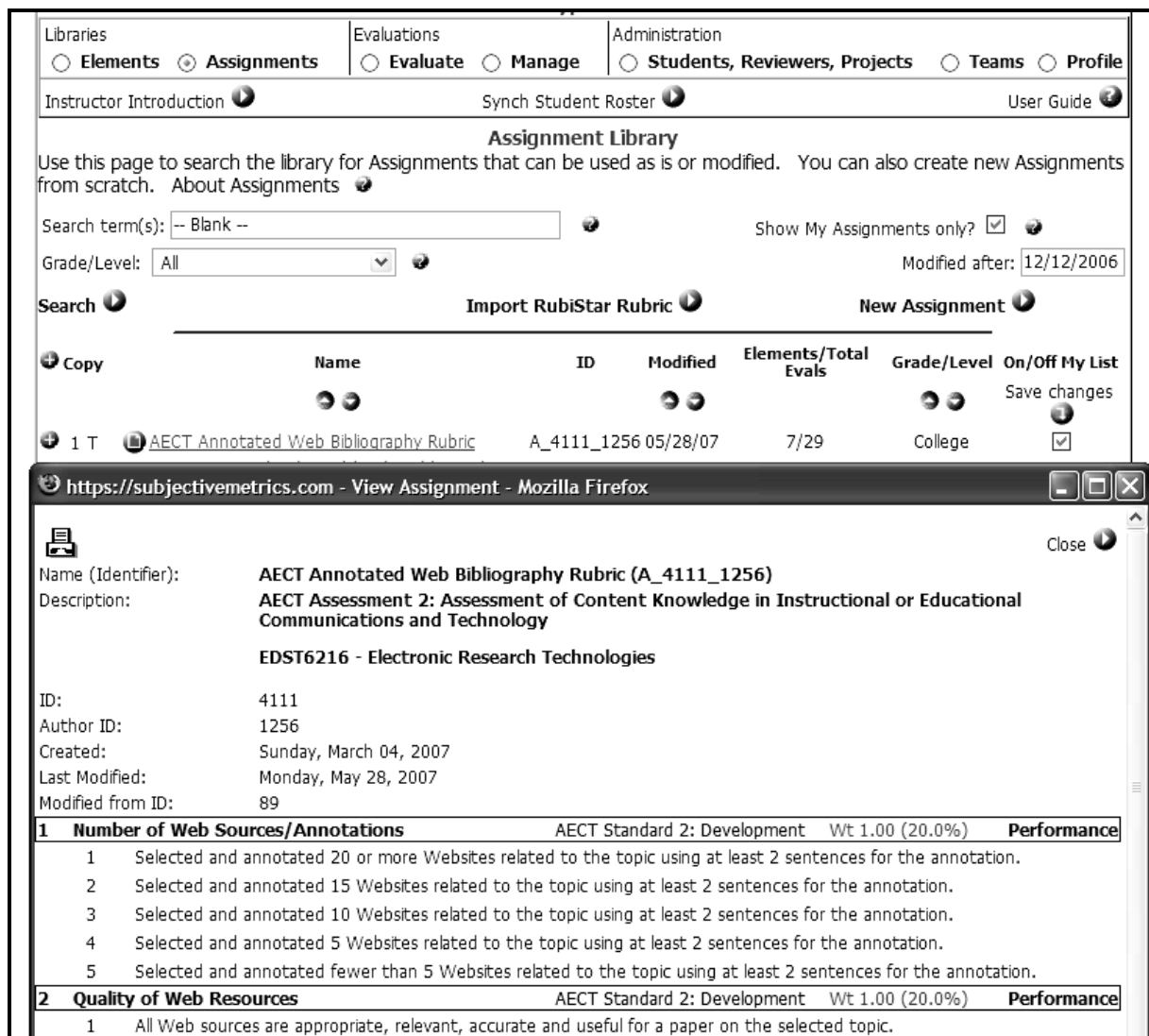


Figure 2: Segment of a Waypoint Rubric imported from Rubistar that addresses accreditation standards.

## Tools for Assessment – Waypoint and Blackboard

The mission of the online course management system Blackboard is to “enable innovations everywhere by connecting people and technology” allowing “educators to fully harness the potential of the Internet to enhance the educational experience within their institutions” (Chasen, 2007). Therefore, with a growing network of Blackboard course platforms for use by educational institutions around the world, the functionality and usefulness of Blackboard has grown. Seton Hall University embarked on the use of the Blackboard course management system seven years ago as

a means for offering greater access to information pertinent for teaching and learning. As an institution of higher education committed to offering traditional computer-enhanced courses as well as online courses and degree programs, we have witnessed a true paradigm shift in utilizing Blackboard beyond offering course content, communication tools, discussion groups, online submission of assignments, journals, testing and a grade book.

Today, our university provides a suite of links through Blackboard for students and faculty to access program and degree information, events and services, communication tools, online assessments and tutorials. Moreover, by having a vision to see beyond what has been previously offered through Blackboard, our university, and most important, our College of Education and Human Services, has been truly innovative in visualizing possibilities for system development to meet assessment and accreditation needs. Through the combined efforts of the Department of Technology and College of Education and Human Services, we developed a standards-based electronic portfolio system in Blackboard that offers the ability to link student products to accreditation standards. Through this system, students are able to deepen their learning by posting their reflections on an outcome for a given assignment or project. Most recently, in an effort to provide a more complete description of student learning outcomes data at the course and even program level, a portfolio system link was developed to incorporate the Waypoint rubric maker.

The Waypoint rubric maker is an interactive Web-based product that allows users, primarily faculty and students, easy access to feedback from course-related projects and products. The decision to integrate Waypoint into Blackboard was integral to the success of the standards-based electronic portfolio system, given the need to provide student learning outcomes data from course project rubrics for accreditation reporting. With the Waypoint and Rubistar alliance, rubrics previously developed in Rubistar can be easily incorporated into Waypoint and therefore, into Blackboard. Additionally, one might find greater ease in developing a rubric in Rubistar, given past experience with its use and rubric catalogue options available to users to review and expand upon. Once a Rubistar rubric is completed, Waypoint can easily import it, at which point, appropriate accreditation standards addressed in a given course project can be applied. Once a rubric is used in a course, Waypoint collects and evaluates student work linked to accreditation standards. Because of this critical functionality, necessary for accreditation reporting, integrating Waypoint into Blackboard was a decision made simple.

The College of Education and Human Services has been met with the challenge to measure and improve upon student learning outcomes while reporting how accreditation standards are met through the curriculum. Waypoint was researched by the technology team and recommended after careful review. To satisfy the need for demonstrating student learning outcomes on course projects included in the students' standards-based electronic portfolios, Waypoint proved to be the product of choice. Waypoint offers a means for obtaining course data as we wait for Blackboard to incorporate their Outcomes System. Although the Blackboard Outcomes System will have the ability to "support and coordinate systemic assessment at every level of the institution" (Blackboard, 2007), the means for providing assessment outcomes at the course and program level is critical at this time. Waypoint requires no specific software to install, and can be accessed with a standard Internet browser. Not only is the system flexible enough to import rubrics from Rubistar, it also can synchronize student rosters. There is no doubt that the system can help the university to "leverage their technology investment" (eSchool News, 2007). Integrating Waypoint to the university's information system was accomplished without a hitch.

Following the adoption of Waypoint through Blackboard, members of the education faculty as well as a small group of faculty from across the university volunteered to be part of a Teaching, Learning and Technology Roundtable (TLTR) "Technology to Support Evaluation and Assessment" committee. The committee began to meet regularly in an effort to better understand the functionality of the new Waypoint product and prescribe courses, especially core curriculum infusion courses that would incorporate rubrics through Waypoint. Various training sessions have taken place on campus to demonstrate the use of the Waypoint system and Rubistar rubric maker. Faculty across campus, and in particular the education faculty, developed effective rubrics that are currently being reviewed for utilization in their courses.

The process for integrating Waypoint and Blackboard has been seamless. This seamless integration is due in part to the innovation that both the Blackboard and Waypoint systems provide. Faculty throughout the university are witnessing the potential Waypoint rubrics provide, especially given the efficiency in which they can be developed, the ability to include accreditation standards and core curriculum proficiencies, and the ease of access to student learning outcomes data.

## The Seton Hall University Experience with Waypoint through Blackboard

At Seton Hall University, we decided to explore the potential and benefits Waypoint offered through Blackboard for use in both traditional and online courses. We have already witnessed and experienced the impact that Blackboard has made on our teaching and learning communities, both traditional and online. With the use of a course management system, our computer-enhanced courses became more dynamic and student-centered while student learning outcomes from online courses met goals similar to those in traditional courses. We have also seen tremendous benefit in offering communication means and course content that reach beyond the classroom doors. Students are able to connect with faculty outside the classroom through email, discussion groups, journals and online chat rooms. Additionally, students have access to details regarding assignments, grading structure and rubrics that alleviate student uncertainty about course requirements. Not only is there a Blackboard grade book available for the faculty, grades are made available to students through Blackboard to the student information system and are provided to students via Instant Messaging (IM) services on their cell phones.

The implementation of Waypoint through Blackboard has enabled computer-enhanced and online courses to expand upon the response to student work beyond what Blackboard has previously offered. The Waypoint benefit is two-fold: first, it offers a means for helping faculty create student learning outcomes feedback quickly and efficiently while saving time in grading; and secondly, the students are offered feedback on their performance in a clearer, more detailed manner (eSchool News, 2007). Figure 3 shows the area in the rubric where instructors can edit an element and offer students advice on particular issues. With the Rubistar alliance, faculty can access a catalogue of rubrics to aid in the development of their own rubrics and further expand upon the rubric features in Waypoint by incorporating accreditation standards addressed in course projects. By doing so, a dual outcome is posed as students are offered an opportunity to better understand accreditation standards, and ultimately, accreditation reporting of student learning outcomes can be achieved.

2 Quality of Web Resources		AECT Standard 2: Development	Wt 1.00 (20.0%)	Performance: 1/5
<input checked="" type="radio"/>	1 All Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.			
Edit	<b>Obs:</b>	All Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.		
	<b>Adv:</b>	Comments can be easily added...in <u>formatted text</u> or plain text. Examples are easily copied and pasted from Microsoft Word or other programs.		
	<b>Ref:</b>			
<input type="radio"/>	2 Most Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.			
<input type="radio"/>	3 Some Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.			
<input type="radio"/>	4 Few Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.			
<input type="radio"/>	5 No Web sources are appropriate, relevant, accurate and useful for a paper on the selected topic.			

**Figure 3:** Comments not included in the Waypoint rubric can easily be added by the Instructor.

The aggregation and analysis of data for program improvement purposes and accreditation reporting (Figure 4) have been a driving force in the Seton Hall College of Education and Human Services, which has expanded the use of Waypoint for purposes beyond the constant monitoring and grading of individual students. Faculty have developed multi-purpose Waypoint rubrics that allow for grading student performance on multiple levels. The results they provide are rich, authentic data for making program change that fosters students learning. With appropriate training and assessment to establish inter-rater reliability, a large group of faculty can share and use a single Waypoint rubric in many classes to assess a particular performance or skill such as numeracy or oral communication that they are responsible for teaching within their particular subject matter specialty, such as chemistry. Since information is linked through Blackboard to student enrollment data, Waypoint allows us to extract statistics based on numerous criteria. For example, with no extra effort, data from students in one course can be viewed by a student's area of study, sex, or academic level. Using the Waypoint filter builder (Figure 5), data can be sorted by many criteria such as standards achieved or students' levels of success on particular skills.

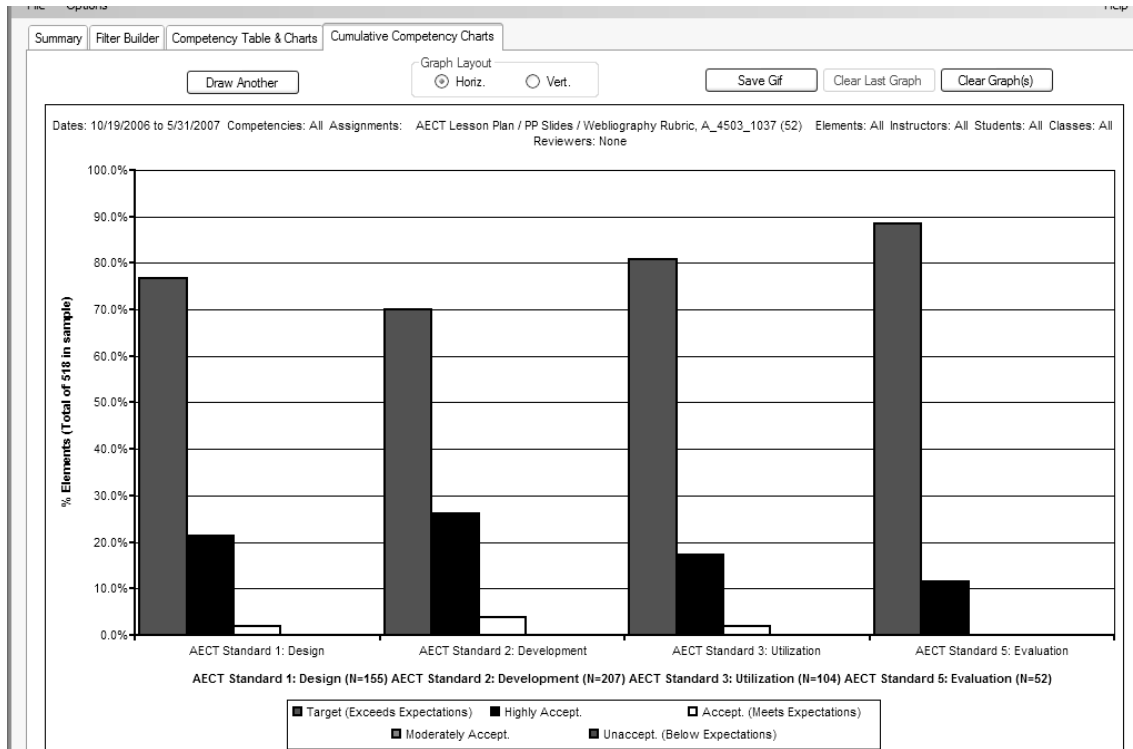


Figure 4: Waypoint aggregated data showing levels at which students met accreditation standards.

Figure 5 is a screenshot of the "Filter Builder" interface. It features a top navigation bar with tabs for "Summary", "Filter Builder", "Competency Table & Charts", and "Cumulative Competency Charts". The interface is divided into several sections for filtering data:

- General Settings:** Includes a "Toggle Sanitize" checkbox, a "Date Range" (10/19/2006 through 5/31/2007), and an "Add Student Attribute Data" button.
- Assignments:** A list of assignments with a search box and "Restrict to Assignments" field.
- Competencies:** A list of competencies with a search box and "Restrict to Competencies" field.
- Elements:** A list of elements with a search box and "Restrict to Elements" field.
- Classes:** A list of classes with a search box and "Restrict to Classes" field.
- Instructors:** A list of instructors with a search box and "Restrict to Instructors" field.
- Students:** A list of students with a search box and "Restrict to Students" field.
- Reviewers:** A list of reviewers with a search box and "Include Reviewers" field.
- Summary Panel:** A summary of current filter settings, including "Current Filter Settings", "Dates", "Competencies", "Assignments", "Elements", "Instructors", "Students", "Classes", "Reviewers", and "Attributes".

An "Apply Filter Settings" button is located in the bottom right, and a message states "No data returned. Try other filter settings." The interface uses a clean, professional layout with clear labels and intuitive navigation.

Figure 5: Filter Builder can contain information on individual students – facilitating analysis by gender, major etc.

## Recommendations and Conclusions

There are many benefits in using Waypoint that have been revealed since the implementation of the system has taken place. Beyond providing a means for communicating expectations for student work, grading of student projects has become more manageable and linking accreditation standards to student learning outcomes a reality. Additionally, faculty have come together to share ideas for developing multiple aspects of rubrics. In particular, members of our “Core Curriculum” committee have offered to develop rubrics that demonstrate how student projects within the core curriculum infusion courses incorporate the core curriculum proficiencies. The Numeracy project rubric is completed and others are being developed based on its elements and levels. This practice is helpful for multiple reasons, as it offers sample rubrics as demonstration to other faculty to consider for their implementation to core curriculum courses as well as to link student projects to core proficiencies much like creating a link to accreditation standards. As faculty become more proficient in linking proficiencies to student projects, they will become more adept at meeting accreditation standards.

The College of Education and Human Services faculty at Seton Hall University have been creating rubrics linked to accreditation standards for many years. Because the practice in developing rubrics in Rubistar has been commonplace, adapting to the use of the new Waypoint system has been simple. The education faculty link course projects to INTASC standards, state standards, and other professional affiliations, especially important for reporting student-learning outcomes to NCATE. The use of Waypoint through Blackboard has allowed faculty to synchronize their course rosters to the rubrics making the process for reporting more efficient. There is tremendous benefit in sharing assignments and rubrics with other faculty and students. Many faculty members are encouraged to revisit and expand upon their rubrics as well as to organize student/peer evaluations and even teams of evaluators that share assignments and rubrics (McGovern, 2005).

The use of Waypoint is not without problems. Some of these include:

- The terminology used by Waypoint is not typical of standard rubrics. Rubrics are called *assignments*, criteria are *elements*, and descriptors of performance are referred to as *observations*.
- The instruction guide is difficult to understand, making training sessions on system use a necessity.
- A Waypoint administrator must be designated to make certain changes and corrections and to create data downloads, which can be imported into spreadsheet and database programs to create charts, graphics and reports.

Overall, the good features of the product far outweigh the bad. In summary, here are some of positive features and helpful ways Waypoint is enabling our college to cope with the overwhelming task of evaluating students and assessing our programs for accreditation:

- It is linked to Blackboard, creating a user-friendly Web-based portal for Blackboard users and leveraging the University’s technology investment.
- Evaluations are Web-based for those without a course management system.
- Waypoint rubrics mimic those rubrics with which most US educators are familiar.
- Waypoint is linked to Rubistar – a familiar, easy to use rubric generator.
- Entering data in Waypoint is easy.
- Grading time is shortened since descriptions of common errors can be built into checklists.
- Completed rubrics can be shared by email directly to the student.
- Completed rubrics can be shared through Blackboard with faculty or other students for peer review.
- Data can easily be aggregated from multiple sections of one course taught by different instructors.
- Evaluation tools (statistics generators) are built into the product.
- Data can be imported into common graphing and report tools (Excel and Access).
- Information to evaluate students and programs is easy to generate in a variety of useful formats.

We have just begun to grasp the full impact of Waypoint on our teaching and learning environment; however, the evidence with regard to reporting is clear. With the seamless integration of Waypoint and Blackboard, faculty now have the needed tools to work toward improving the quality of assessment. There is no doubt that we will continue to utilize Waypoint through Blackboard as a means of reflection for curriculum refinement, student feedback and improvement, application of core curriculum proficiencies, and quality assessment for meeting accreditation needs.

## References

- Barootchi, N. & Keshavarz, M. (2002). Assessment of achievement through portfolios and teacher-made tests. *Educational Research*, 44(3), 279–288.
- Beekman, G. & Quinn, M. (2006). *Computer confluence*. Upper Saddle River: Prentice Hall.
- Blackboard. (2007). Plan. Measure. Improve. Blackboard Outcomes System. Retrieved 10 February 2007 from: [http://www.blackboard.com/products/academic\\_suite/outcomes\\_system](http://www.blackboard.com/products/academic_suite/outcomes_system)
- Bradley, J.C. (May 11, 2005). Using Waypoint. Drexel CoAS E-Learning. Retrieved 2 January 2007 from: <http://drexel-coas-elearning.blogspot.com/2005/05/using-waypoint.html>
- Chasen, M. (2007). Blackboard Awarded Patent on e-Learning Technology. Blackboard Inc. Press Release Retrieved online 10 February 2007 from: <http://www.blackboard.com/company/press/release.aspx?id=887622>
- eSchool News Online. (2007). Waypoint + Rubistar: Interactive rubrics. Retrieved online 16 February 2007 from: <http://www.eschoolnews.com/cic/showcase/Showcase.cfm?id=248>
- Innovation Philadelphia. (September 7, 2004). Regional professors reduce teachers' homework headaches. Retrieved 17 December 2007 from: [http://www.imakenews.com/innovationphiladelphia/e\\_article000300884.cfm](http://www.imakenews.com/innovationphiladelphia/e_article000300884.cfm)
- Key, P. (May 5, 2006). Subjective Metrics scores high in how students' work is graded. *Philadelphia Business Journal*. Retrieved 17 December 2007 from: <http://www.bizjournals.com/philadelphia/stories/2006/05/08/newscolumn3.html>
- Kuhs, T., Johnson, R., Agruso, S., & Monrad, D. (2001). Put to the test. Portsmouth: Heinemann.
- Mertler, C. A. (2001). Designing scoring rubrics for your classroom. *Practical Assessment, Research & Evaluation*, 7(25). Retrieved 2 January 2007 from: <http://pareon line.net/getvn?v=7&n=25>
- McGovern, H. (2005). Reflections on Using Rubrics for Writing Assignments. Evidence: Program assessment for continuous improvement. Retrieved online 17 February 2007 from: [www.stockton.edu/~teaching/evidence/evidence0905a.pdf](http://www.stockton.edu/~teaching/evidence/evidence0905a.pdf)
- Stevens, D. & Levi, A. (2005). *Introduction to rubrics: An assessment tool to save grading time, convey effective feedback and promote student learning*. Sterling, VA: Stylus Publishing.
- Subjective Metrics, about us. (n.d.). Subjective Metrics. Retrieved 20 February 2007 from: <http://docs.subjectivemetrics.com/home/aboutus/press/press.htm>
- Thinking about accountability: Assessing student achievement project. (n.d.). Education Development Center. Retrieved February 22, 2007 from: [http://www2.edc.org/asap/acct\\_subtheme.asp?pkTheme=26](http://www2.edc.org/asap/acct_subtheme.asp?pkTheme=26)
- Waypoint. (2007). Subjective Metrics, Inc. Retrieved 11 February 2007 from: <http://www.subjectivemetrics.com/index.cfm>

## Acknowledgements

We wish to thank Andrew McCann and Peter Heisen for sharing their vast knowledge of Waypoint and for their patience in providing answers to our many questions.