As the spring semester draws to a close, students create final displays of their learning in the form of exams, papers and projects, faculty evaluate these products, and the end results—grades—are dispersed to the students. Students then have an opportunity to reflect upon their academic work and plan their next steps toward their learning goals. Likewise, faculty review their completed work and begin to plan for the next academic year, and the University looks back upon recent efforts and looks ahead to meeting and exceeding its forthcoming goals.

In this issue of Assessment News, Dr. Allen Stix and Dr. Charles Tappert, both of the Seidenberg School of Computer Science and Information Systems, share a process for assessing student learning outcomes while maintaining engagement among student, faculty and other Pace community members in “How a Capstone Course Fosters a Culture of Assessment.” Indeed, this culminating experience doesn’t give an opportunity for reflection and learning only to the students, but also to faculty who can use the wealth of feedback to tweak course elements, adjust teaching styles and contribute actively to the evolution of the curricula.

The title of this year’s heavily-attended Dyson Day, The ePortfolio—an Effective Tool to Document and Reflect on Learning, echoes the theme of reflection and self-regulation. Over the last several decades, the higher education industry has been motivated—both by federal regulation and the cultural sea change—to evaluate its relationship to diversity, such that the educational experience is equally accessible to students of any background or learning style.

At the 2010 Faculty Institute, Diversity: Understanding the Changing Landscape of Learning and Teaching, keynote presenters and Pace faculty and administration shared their personal experiences and best practices for sustaining an inclusive learning environment. And, in the upcoming months, Pace faculty have the opportunity to review and nurture their own work at the Center for Teaching, Learning and Technology’s Academic Portfolio Workshop and Course Development Day. All of these activities afford opportunities for learning from external and internal peers, taking stock of the resources in place, and perhaps enhancing and expanding our existing culture and practices.

We hope all in the University community take advantage of this brief springtime lull to reflect upon the results of our work, connect with each other, and recharge our unified commitment to a culture of learning.

On April 15th, Pace University was—for the second year—the venue for the Middle States Commission on Higher Education assessment retreat: Fostering a Campus Culture of Assessment. Institutional teams from throughout the Middle States region gathered to learn and discuss assessment strategies with an eye toward incorporating assessment into campus culture. Provost Geoffrey L. Brackett, Dr. Joseph Ryan and Assistant Vice President Barbara Pennipede attended the retreat to explore new ways Pace can continue to promote a climate of assessment that will result in an improved learning environment for our students.
Pace University became a member of the Leadership Coalition of the Bringing Theory to Practice Project (BTtoP) in the spring of 2009. With 52 other institutions, Pace has committed to the BTtoP mission for “colleges and universities to reassert their core purposes as educational institutions not only to advance learning and discovery, but to advance the potential and well-being of each individual student, and to advance education as a public good that sustains a civic society” (AAC&U). To this end, Pace University is focusing on enabling faculty and administration to honestly explore the extent and depth of student learning, to identify weaknesses and to extend and strengthen Pace’s successful methodologies and pedagogies.

**Supporting Campus Cultures for Learning**

In January 2010, members of Pace’s BTtoP faculty and administrative team—Dean Nira Herrmann, Dr. Anthony Joseph and Assistant Vice-President Barbara Pennipede—attended a Leadership Coalition conference at which institutions shared their plans for and initial progress in creating and sustaining campus cultures for learning. The Coalition institutions gained valuable feedback from their peers and the BTtoP organizers, while better allowing BTtoP to understand and sustain the diverse yet integrated initiatives. 2010 is the “Year of the Faculty” for the Leadership Coalition, so-named because of BTtoP’s emphasis on “supporting opportunities for faculty members to examine, and to champion, their role as agents of transformational change” (BTtoP, Looking Ahead 2010-2012). The Pace University team shared its plans to nurture faculty and administrative involvement in student-centered high impact practices.

**Bringing Theory to Practice Conference Day at Pace**

On October 15, 2010, Pace will hold a Bringing Theory to Practice conference day for faculty and administrators intended to celebrate the high impact educational practices already in use at the University, such as first-year programs and curricular requirements, learning communities, writing enhanced courses, undergraduate research, service learning, internships and capstone courses and projects, while also providing opportunities to improve and develop student-centered practices. The keynote speaker is Jillian Kinzie, Associate Director, Center for Postsecondary Research & NSSE Institute. She will discuss the research regarding high impact educational practices and the factors that influence student success as identified through Project DEEP. Other features of the conference include: a panel of faculty with expertise in high-impact practices; roundtable workshops; and a student panel. If you would like to be involved as a panelist and/or roundtable facilitator, or if you can recommend eloquent students who have participated in high-impact academic or co-curricular activities whom Pace can invite to be panelists, please contact Barbara Pennipede (extension 22699).

The BTtoP Project is an initiative of the Association of American Colleges and Universities, developed with and sponsored by the Charles Engelhard Foundation of New York City.
How a Capstone Course Fosters a Culture of Assessment

Allen Stix and Charles C. Tappert,
Seidenberg School of Computer Science and Information Systems

Here's a wish list for a program assessment to use in the baccalaureate or the master's programs in computer science:

1. The evaluative method must be a direct assessment, an actual demonstration of skills, not a questionnaire that merely asks about skills.
2. Inquiry must be comprehensive, tapping into the full range of abilities indicated as program outcomes. In the case of computer science, these include:
   - technical skills such as programming adeptness or setting up a website that runs servlets and has a backend database
   - informedness in the mathematical and algorithmic principles needed to model and design systems in areas such as biometrics, pattern recognition, and data mining
   - the ability to communicate orally, electronically, and through formal documents with colleagues and laymen
   - readiness for collaborative work on teams requiring the coordinated division of labor, internal governance, and a spokesperson for external relations
3. The process should be beneficial to the student participants. Although a summative assessment in the sense that it yields information on the program, it should offer the compensatory possibilities usually associated with a formative assessment.
4. The assessment should be perceived as credible by the faculty and used as a basis for program improvement.
5. The evaluative method should promote the assessment ethos by engaging interest and activity among the faculty.

This wish list sounds extravagant, if not impossible, but we believe we've discovered a means and we wish to share it. The idea—which we've been using for fully eight years—is a capstone course that culminates in a festival of student presentations called "Research Day." Our mechanism, as is, may not fit the bill for most other programs, but the concept may help to stimulate some useful ideas.

The intent of the capstone course is to provide students near the completion of their degree with an experience that draws upon and ties together all they have learned. One of the authors has pioneered the capstone course in the MS in computer science program. While the format for this course continues to evolve, its highly successful essence has not changed in almost ten years: student teams design, build, test, and deliver software for real customers. These customers include non-profits, technology start-ups, faculty members and DPS students who need a specialized computing infrastructure to support their research, and the greater University community. The other author has been teaching the capstone course in the BS in computer science for five years, patterning it on the course in the MS. This piece will focus on the capstone course in the master's program.

The overarching program objective is to prepare graduates for real-world information technology projects. The preparation is supported by a range of program outcomes, exemplified by the bullets above. Because the capstone course is a project-oriented course that simulates the professional workplace, it supplies meaningful insights into how well the program's outcomes are being met.

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For the project, students elicit the requirements for an application from an actual customer and transform these into a useful computer information system. This presupposes conversance with contemporary technology coupled to communications, problem-solving, critical thinking, as well as dealing with the exigencies of group dynamics. Each project culminates in two key deliverables. One of these is the software for the customer. For instance, it may be a web-based facility for collecting data and compiling feature vectors for the keystroke biometric, or it may be an application running on a hand-held device for identifying species of flowers. The other is a professional-quality paper for presentation at our Student-Faculty Research Day (see website screen shot below) held annually in May at the Graduate Center. Papers are reviewed, revised, and published in a bound proceedings and online on the website. Presentations begin at 9:30 a.m. and continue until around 4:30 p.m. with a break for a lunch provided by the Seidenberg School. Research Day is well-attended by the faculty, some of whom are themselves presenters or "project customers," and, of course, by the students. It is difficult to convey the excitement and happiness in the air. Students are serious and professional, arriving spruced-up and with PowerPoint slides and demonstrations; but there is plenty of humor and good-natured in-joking.

The team's processes and deliverables are, intrinsically, a direct assessment. These are assessable with rubrics. The rubrics for programming projects and written documents can be applied to the software and documentation delivered to the customer. The rubrics for written documents and oral presentations can be applied to the Research Day presentation. And the rubric for team performance can be applied to collaborative functionalities. Transcending the measurements are the impressions conveyed by the activities to those involved. These contribute importantly to our program assessment wish list.

The Michael L. Gargano 7th Annual Research Day, Seidenberg School of CSIS

The Michael L. Gargano Student-Faculty Research Day provides students and faculty with the opportunity to present their research. Graduate and undergraduate students are encouraged to attend and present. This year's workshop will consist of:

- Welcome by Dean Constance A. Knapp
- Presentation of Papers
- Light Lunch

The relevant workshop information can be found at the links at the top of the page.

Conference Co-Chairs: Dean Constance A. Knapp and Dr. Charles Tappert
Program Chair: Dr. Allen Stix
Arrangements Chairs: Dr. Jonathan Hill and Ms. Christine Longo
Other Assistance: Assoc. Dean Bernice Houle and Ms. Gerry Forstrom

Any questions, send email to Dr. Jonathan Hill.

Dr. Michael L. Gargano, PhD, was an integral member of the Pace University community for more than 30 years. Mike was by nature a creative teacher and a prolific researcher who was loved by his students. His research interests included topics in biologically inspired algorithms, discrete mathematics, graph theory, information systems, and business applications of computer models. Michael was the first chair of the Computer Science department, and was continuously engaged in research activities with the students in the Seidenberg DPR Program.
The skill levels achieved by students are evident, in a from-thirty-thousand-feet kind of way, to all attendees at Research Day as all can see what was, and was not, accomplished. Further, every presentation is capped by questions and answers. These product demonstrations inform the faculty on topics within courses that may need greater prominence. They have even convinced the “hard-skills only” contingent of the importance of soft-skills. Tangibly, they have resulted in a re-thinking of the courses that should be within the undergraduate CS core. Most of all, this parade of “live portfolios” is a shared experience that crystallizes discussions, seeding a culture of assessment. To the students, working on a project affords the opportunity to upgrade their skills on the fly.

While our chief concern is the experience delivered by the capstone, grading students on the quality/quantity/utility and general helpfulness of their contributions to the group’s effort is important too. The students evaluate each team member, including themselves, by assigning “=“ for average contribution, “+” for above average contribution, and “−” for below average contribution. Multiple “+” or “−” signs can be used to indicate extra strong or extra weak contributions, but the total number of plus and minus signs must balance out (i.e., be equal in number). A team grade for a particular deliverable or time interval is first determined, and then grades for individual students are adjusted relative to the team grade based on the peer evaluations along with additional input from the customers and instructor. For example, a typical peer evaluation summary chart with associated grades is shown in the table below for a four-member team. Each of the four evaluation columns shows the evaluation of a team member evaluating him/herself and the other team members. The summary column shows the sum of each row of evaluations, and the grade column shows the student grades. Here, a team grade of 85% is first determined and then individual grades are adjusted relative to the team grade, in this case up or down 2% for each “+” or “−” sign. For simplicity, the table below shows only the peer evaluations, but customer and instructor evaluations are usually included as well. Team leader and instructor evaluations can be given extra weight, and self evaluations that appear overly inflated are usually eliminated.

### Example team peer evaluation and grade chart.

<table>
<thead>
<tr>
<th>Team Member</th>
<th>Eval 1</th>
<th>Eval 2</th>
<th>Eval 3</th>
<th>Eval 4</th>
<th>Summary</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+</td>
<td>=</td>
<td>+</td>
<td>++</td>
<td>+ + + +</td>
<td>93</td>
</tr>
<tr>
<td>2</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>79</td>
</tr>
<tr>
<td>3</td>
<td>−</td>
<td>=</td>
<td>=</td>
<td>+</td>
<td>= −</td>
<td>83</td>
</tr>
<tr>
<td>4</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>85</td>
</tr>
<tr>
<td>Average</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>=</td>
<td>85</td>
</tr>
</tbody>
</table>

Students are also asked a number of general questions for the time interval in question—the number of hours per week spent on project work, their specific contributions, their strengths and how these were used, their areas needing improvement, and what has enhanced and/or handicapped their team’s performance—and the responses might influence the instructor evaluation of a student’s contribution to the team effort. For additional input the instructor can discuss team member contributions with the team leader.

The one pitfall of a project-oriented capstone course is the evaluation of individual student contributions to the team effort. The method described with the table above removes this obstacle, enabling us to fulfill the original assessment wish list.

*Allen Stix and Charles C. Tappert,*

*Seidenberg School of Computer Science and Information Systems*

[astix, ctappert]@pace.edu

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In the Middle States Commission on Higher Education’s *Assessing Student Learning and Institutional Effectiveness*, the assessment of student learning is “the third element of a four-step teaching-learning-assessment cycle,” and the fourth step is the use of assessment results to improve teaching (MSCHE, 3). Over the past decade, Pace University has made a concerted effort to assess student learning not only at the classroom, course or program level, but at an institutional level. This institutional assessment is a cognitive assessment, different, for example, from a self-reported survey of attitudes and experiences such as the National Survey of Student Engagement (NSSE). The institutional instrument Pace used from 2002 to 2009 was the *Collegiate Learning Assessment* (CLA). However, the usefulness of CLA results has not been proportionate to the expense and difficulty of CLA administration, so the Provost charged the University Assessment Committee with finding a new institutional cognitive assessment.

After comparing several national instruments, the Assessment Committee has decided to run a pilot administration of the abbreviated form of the *Educational Testing Service Proficiency Profile* (ETSP) in spring 2010 to approximately 200 students, mostly seniors. An attractive feature of the ETSPP is the length: the 36 questions are timed at 40 minutes, preceded by ten to fifteen minutes of demographic items and Pace-created questions. This relative brevity (the CLA could require up to three hours), combined with a paper-and-pencil format, makes the ETSPP deliverable within one class period. Thanks to the cooperation of the deans and assessment directors, several faculty have volunteered class time from their upper-level courses for administration of the ETSPP to their students.

So far, most student participants appear to have put good effort into their work on the exam and have been generous in giving their feedback on the ETSPP. Some have been concerned that their poor performance might reflect negatively upon the University, and others have voiced suspicion about Pace’s motives for testing them and collecting data. Some students have offered suggestions for future local questions, and many have expressed curiosity about their individual scores. Individual results are not sent to the students by ETS, but the Office of Planning, Assessment and Institutional Research will extract and send test scores to those students who have asked for them. Aggregate data for the school will be posted on the University Assessment Committee website in early June.

Although ETS describes the ETS Proficiency Profile as a measure of general education skills, the Assessment Committee does not consider this instrument to be a direct measure of the Pace Core Curriculum, but has opted to pilot the exam to see whether the data could serve as an indirect measure of peaks or valleys in senior-level achievement. Should the data look promising, Pace could administer the exam yearly and chart change over time in Pace students’ results. While the efficacy of this particular instrument remains to be seen, it is important for us to continue our tradition of both improvement and accountability through assessment, and piloting the ETS Proficiency Profile shows the University’s ongoing dedication to assessing student learning at all levels.

**Thank-you to the Students and Faculty who Participated in the 2010 Pilot of the ETS Proficiency Profile!**

**COM** 481, Dr. Barry Morris, Dyson College of Arts & Sciences  
**CS** 312, Dr. Allen Stix, Seidenberg School of Computer Science and Information Systems  
**CS** 389, Dr. Christelle Scharff, Seidenberg School of Computer Science and Information Systems  
**IS** 441, Dr. Hsui-lin Winkler, Seidenberg School of Computer Science and Information Systems  
**LIT** 499C, Dr. Deborah Poe, Dyson College of Arts & Sciences  
**MGT** 490, Dr. Bruce Bachenheimer, Lubin School of Business  
**MGT** 490, Dr. Branko Bucar, Lubin School of Business  
**MGT** 490, Dr. Theresa Lant, Lubin School of Business  
**MGT** 490, Dr. Noushi Rahman, Lubin School of Business  
**NUR** 415, Dr. Karen Haghenbeck, Lienhard School of Nursing  
**TCH** 490, Dr. Sister Mary St. John Delany, School of Education
Hi! I just finished reading the Assessment News and wanted to tell you how very interesting I found it. That said, I would also like to add that, as a Professor of Media, Communication, and Visual Arts (I specifically teach in the Communication Area), I was exceptionally troubled to read that there is a decrease in student verbal class participation and it started me thinking.

Thought Number 1: Is there any more information that you gathered in this particular area?

Thought Number 2: Might this discovery, in the end, encourage and realize a greater interest in my colleagues in the idea of stressing speaking across the curriculum as much as the idea of writing across the curriculum has been stressed and continues to be stressed?

And, Thought Number 3 (the most controversial): Could our ever-growing use of the internet for silent communication be the cause of all this? Indeed, I often wonder why so many of us have "charged" toward this mute way of interacting that needs so many "signs" and "drawings" to signal a word’s emotional content when the human voice does it so beautifully and naturally! I just can’t understand it!

And, sadly, all this makes me think about what we lose in our determined "voiceless-ness." Which brings me to a very famous Yiddish writer’s work (famous among Yiddish readers) specifically I.L. Peretz’s "Devotion Without End." In this short story a well-respected rabbi is looking for a husband for his beloved only daughter. The problem: who to choose from among the many brilliant students come far and wide to study with him. What does he do? He sits in his study, near to where his students are learning (which among Jews entails a great deal of speaking) . . . and listens. For, unlike those who see the soul in a person’s eyes, the rabbi believes that the soul of a person, their very spirit, resides in the voice, a voice no one else has, much like fingerprints. And thus he chooses . . . successfully.

So what’s my point? Is the collective "soul" going out of our classrooms? Are we wound up to talk, and are our students, like automatons, just listening? Not reacting? Not discussing? Not living what they learn? I don’t believe that that is what learning is about, and I don’t believe my colleagues do either!

Finally, I really am all for "progress" (yes, I am slow about it) but, really, I am. Still, some things simply are . . . and should not be devalued! After all, whoever or whatever created our world did so with his/her voice, and not by sending an e-mail . . .

Diane Cyarkin, Dyson College of Arts & Sciences

Editors’ note: the decrease in “asking questions in class or contributing to class discussions” revealed in the NSSE 2009 results applies to Pace seniors, not freshmen. See NSSE’s Annual Results 2009 for discussions of trends in benchmarks of effective educational practice, including active and collaborative learning.

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Pace University Presentations on Assessment

At the AAC&U’s General Education and Assessment: Maintaining Momentum, Achieving New Priorities conference held on February 18-20 in Seattle, Barbara Pennipede, Dr. Linda Anstendig and Dr. Adelia Williams-Lubitz presented a session entitled Moving From Goal to Implementation in General Education Assessment.

On March 19th, Dr. Randi Priluck addressed the McGraw-Hill Regional Workshop on Performance, Accountability and Assessment held at Pace University. In her lecture “Assessment Issues Faced in Education Today,” she discussed the background of and research on student learning assessment and accountability issues in Higher Education.

RESOURCES

On May 20th the Seidenberg School will hold its annual Assessment Day in Midtown from 9:00 a.m. to 12:00 p.m. The University community is welcome to attend.


CALL FOR SUBMISSIONS

Would you like to write 1,000 to 2,000 words (four to eight double-spaced pages) about your experiences with assessment of student learning outcomes or program outcomes? Assessment News is looking for original, previously unpublished content for its next issue. We would like a member or members of the Pace community to share their experiences with “High-Impact Educational Practices.” Assessment News is pleased to offer an honorarium of $250 to the author/s of the selected article. This honorarium is funded by a grant, written by Provost Geoffrey L. Brackett, from AAC&U’s Bringing Theory to Practice project, which advocates the “academic community's support of engaged learning and the relationship of such learning to student health and civic development” (AAC&U 2009).

CONTACT ASSESSMENT NEWS

Pace University’s Assessment News welcomes comments and suggestions. To reach the editors, please send an email to jatusko@pace.edu, including Assessment News in the subject line. Paper may be sent via interoffice mail to OPAIR/Assessment News, Dow Hall, BRC or via commercial carriers to Planning, Assessment and Institutional Research, Pace University, Dow Hall S115A, 235 Elm Road, Briarcliff Manor, NY 10510.

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