All Things Assessment at KU is edited by Dr. Gil Clary, and members of the Advisory Board are Dr. David Beougher, Dr. Mahfuzul Khondaker, Dr. Michelle Kiec, Dr. John McCarthy, Professor Krista Prock, and Dr. Carole Wells. Suggestions for articles, announcements, and feedback of any sort are welcomed and appreciated.

Save the date: Thursday, August 21, 2014 – General Education and Assessment Workshop. This year’s General Education and Assessment workshop will be held on August 21, 2014, and the focus of the workshop will be on discussions about aligning Kutztown University’s General Education learning outcomes, assessments via the KU reporting templates, and assignments. The workshop facilitator will be Dr. Terry Rhodes, Vice President for the Office of Quality, Curriculum and Assessment at AAC&U; Dr. Rhodes was one of the leaders for AAC&U’s VALUE rubrics project. The workshop is sponsored by the General Education Assessment Committee, General Education Committee, Center for the Enhancement of Teaching, and the Office of Assessment. Additional details will be forthcoming.

Signature Assignments and Authentic Assessments
Gil Clary, Office of Assessment

When conducting assessments of student learning, many faculty rely on some sort of rubric or scoring guide to determine the extent to which their students are able to demonstrate a desired learning outcome. While a tremendous number of rubrics have been developed and can be found on the internet, perhaps the most organized effort is the Association of American Colleges and Universities’ (AAC&U) VALUE (Valid Assessment of Learning in Undergraduate Research) rubric project that resulted in rubrics for sixteen General Education learning outcomes (see http://www.aacu.org/VALUE/rubrics/).

While having tools that can be used to evaluate student work is important, there is the question of what exactly it is that is being evaluated? That is, what assignment or student work product is the basis for the evaluation? Without a doubt, faculty can easily answer that question for learning goals or outcomes in their own programs, but the question is more challenging when it comes to
General Education learning outcomes. The purpose of this article is to start the conversation about how well class-based assignments align with learning outcomes and rubrics or other scoring guides that assess those outcomes, particularly as the alignment concerns Kutztown University’s General Education program. In fact, members of GEAC (General Education Assessment Committee) have received requests for guidance with the assignments that might be used in assessments of General Education outcomes.

At the national level, discussions about the alignment of assignments to outcomes and rubrics have often been centered on signature assignments and authentic assessments. Authentic assessments, according to Suskie (2009), are “performance assessments that ask students to do real-life tasks, such as analyzing case studies with bona-fide data, conducting realistic laboratory experiments, or completing internships” (p. 26). Not surprisingly, these and other kinds of authentic assessments can be found in most, if not all, academic programs and program-level outcomes assessments at Kutztown.

Related but not necessarily identical to authentic assessment is the idea of signature assignments. Signature (or key or core) assignments also tend to involve real-life tasks but the distinctive feature of signature assignments is the intentionality behind the creation of assignments, so that the assignment will (for the instructor) reveal, and (for the student) provide practice with, one or more specific learning outcomes. According to Rhodes and Finley (2013), instructors developing these kinds of assignments “are encouraged to think carefully and creatively about the assignment’s intended outcome(s) and about the best ways to prompt students’ application of the outcome(s) to knowledge areas appropriate to the course.” (p. 28). Moreover, Rhodes and Finley identify four questions that can provide guidance to instructors: “What particular dimension(s) of the outcome is the assignment intended to address? ... How should students be guided to use the material in order to meet the outcome criteria? ... Is the assignment intended to meet more than one outcome? ... What types of learning experiences and associated assignments will be most helpful in allowing students to demonstrate their learning on a particular outcome?” (p. 28).

As noted earlier, it is highly likely that academic programs have signature assignments for the learning goals in the program, although there is probably some benefit to periodically revisiting the alignment of assignment to outcome and making the connection more explicit to students. The greater challenge, however, arises in the case of the General Education program and its learning goals. Specifically, the challenge centers on whether assignments related to General Education are explicitly and intentionally aligned with those outcomes, and whether there is a shared understanding of these alignments.

Perhaps the most fundamental challenge with respect to signature assignments, and assessments, of General Education outcomes comes from the fact that the General Education program is one that belongs to all faculty, and therefore calls for cross-department collaboration and participation.

As a next step in implementing the revised General Education program at Kutztown University, the General Education committees (General Education Committee and General Education Assessment Committee), Center for the Enhancement of Teaching, and the Office of Assessment are jointly sponsoring a one day workshop on aligning General Education outcomes, assessments, and assignments. The workshop will be held on Thursday August 21, 2014, and led by Dr. Terrel Rhodes, Vice President for the Office of Quality, Curriculum, and Assessment at AAC&U. The workshop’s objective is to facilitate conversations among faculty about their General Education-related assignments, and to promote greater intentionality in the connections of assignments to learning goals.

Data Mining Student Time Management Patterns in Programming Projects

Dale E. Parson (Computer Science) & Allison Seidel (Undergraduate student, Computer Science)

Computer science faculty members cite procrastination as one of the key causes of poor student performance in programming projects, while students cite conflicting demands for time. This study uses a tool-driven process of automated compilation and testing of individual student programming projects to collect data on when, for how long, how often, and with what magnitude of effort and accomplishment, students engage in work to complete their programming assignments. Participation is voluntary, and data from auxiliary sources including a questionnaire on conflicting demands on time complement automatically collected data. Analyses reveal that procrastination and excessively brief work sessions are the main indicators of problems for students with inadequate prior success in earlier computer science courses. Most students with successful track records know when they can afford late starts and short sessions. The eventual goal of this research is the construction of an automated warning system for at-risk computer science students.

Examination of the following data table provides the best basis for a summary. This is a K-means clustering table, based on a statistical algorithm that combines performance measures that tend to covary into clusters. Each of the 111 samples of the full data set comprises a detailed study of the work habits and some auxiliary data for one student completing one programming project in the spring 2013 CSC 243 Java programming course at Kutztown University; students completed more than one project.

<table>
<thead>
<tr>
<th>Cluster number</th>
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<tbody>
<tr>
<td>Attribute</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Start Time prior to deadline (hours)</td>
</tr>
<tr>
<td>Average Minutes per session (session has no work gaps &gt; 60 minutes)</td>
</tr>
<tr>
<td>Number of work sessions</td>
</tr>
<tr>
<td>Total minutes on task</td>
</tr>
<tr>
<td>Computer Science GPA (at start of semester)</td>
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<tr>
<td>Project grade (0 – 100%, with up to 27% bonus points on one assignment)</td>
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Cluster 4 shows that the smallest lead time in starting a project (36.19 hours) correlates with the lowest average project grade of 57.19%. Cluster 0 establishes that students with a reasonably high incoming computer science GPA (3.34) can afford some degree of procrastination (57.88 hours start before due). Cluster 5 shows that students with the second lowest average grade of 88.86% for the clusters started with a large lead time of 245.25 hours, but that average work session time of 49 minutes is insufficient for students with an incoming CSC GPA of 2.61. Other statistical approaches confirm the impact of low Start Time and Average Minutes values on at-risk students. 

Procrastination is a culprit in poor results for programming projects, but it is not simple, linear one. Some students who have performed well in past computer science courses apparently know their limits. However, for many students, and especially for at-risk students with lower computer science grade point averages at the start of a programming course, starting at least 11 days before the due date of a two-week project yields demonstrable benefits. Also, the minimum length of a programming work session should be at least 60 minutes, and preferably 75. Spending less time is apparently not enough to engage the problem.

The plan is to implement a prototype warning system for at-risk students after completing analysis of additional course data in summer 2014, with voluntary use by students to follow.

Editor's Note: Dr. Parson and Ms. Seidel were recently informed that the work discussed here will be presented at the 2014 International Conference on Frontiers in Education: Computer Science and Computer Engineering, July 21-24 in Las Vegas. The paper will also be published in the proceedings. Congratulations!

**College Assessment Committee News**

**College of Business**

Martha Geaney, Dean’s Office

Did we achieve our intended results? This is the question the Department of Business Administration assurance of learning process is meant to answer. One of the most critical concepts related to assessment that needs to be communicated early and often to all stakeholders is the philosophy that the purpose of assurance of learning or assessment is to identify opportunities to increase student learning outcomes. Through intensive faculty support and involvement, assessment data is analyzed to find areas that need to be strengthened and changed. For this reason, a transparent process identifies not only the good news but also the “bad news.” But there is really no bad news, when there is an effective process that points to the steps that will be taken in order to achieve the desired results next time. In this way the assurance of learning process that we use to increase our students’ learning also becomes an opportunity for us to reflect upon our own learning process in this journey of bringing value to our students.

**College of Liberal Arts & Sciences**

David Beougher, Dean’s Office

Continuing their focus on assessing the relevance of retention and persistence efforts, the LAS Assessment Committee finished the academic year with the submission of several informative reports focused on quantifying the results of high impact practices within the college. These studies included initial assessment of the effect of a small subset of clubs and societies on student GPA and retention, the role and variety of mentoring programs both here and at other higher education institutions, a study on increasing the impact of supplemental instruction (SI), and an analysis of learning communities’ contribution to retention and academic success among first year students. Each of these projects has considered conventional wisdom and dialogue about high impact practices, assessing theory and assumptions in the context of
Kutztown University. The committee has made recommendations for next steps within each of these areas for the upcoming academic year.

**College of Visual & Performing Arts**

Peg Spears, Art Education & Crafts Dept.

Art Education professors teaching the General Education Arts elective - ART 10 “Experiencing Art” - assess student levels of performance through a variety of studio assignments using art assessment criteria. In the section taught by Peg Spears, the course is set up to expose students to an art frame of mind by addressing the question, *what do the arts teach?* The eight *Studio Habits of Mind* developed by Lois Hetland, Ellen Winner, et al., from Project Zero at the Harvard Graduate School of Education, serve as the criteria to assess student learning with respect to art. These criteria are:

1. develop craft,
2. observe,
3. express,
4. envision,
5. engage and persist,
6. stretch and explore,
7. reflect, and
8. understand the art world.

As the final assignment, students are asked to reflect on their engagement with the Studio Habits of Mind, as they relate to the content of the course. From this, Dr. Speirs is able to see what Studio Habits they identify and how well students are recognizing the Studio Habits in their own work. Overall, students are able to recognize the Studio Habits with accuracy and insight but haven't necessarily included all the Studio Habits that apply to their experiences with each assignment. This semester language was added to the rubric to help clarify the target or desired outcome. Also, this semester students are being asked to reflect on the Studio Habits in relation to their major discipline.

**General Education Assessment Committee: Update**

Krista Prock, Rohrbach Library

During the spring 2014 semester, GEAC has been busy coordinating assessments of student progress toward Goal 3 of the KU General Education program. Goal 3 is

> to inculcate a sense of personal and social responsibility that is anchored through active involvement with diverse communities and real world challenges

and includes the following domains:

1. Local and global civic knowledge and engagement
2. Intercultural knowledge and competence
3. Ethical reasoning and action
4. Personal qualities and attitudes such as passion, curiosity, self-confidence, imagination, cooperation, commitment, and support for lifelong learning

We have recruited over 20 faculty who have agreed to participate in GEAC assessments this semester. Data will be collected at the end of the semester and analyzed in fall 2014. A standard training session was created by Dr. Nancy Cardenuto using PowerPoint so that all faculty can receive identical information regardless of whether or not they attended a face to face training session. The training presentation is available on the GEAC website: [http://www.kutztown.edu/gened/GEAC.html](http://www.kutztown.edu/gened/GEAC.html).

Our other major project has been further preparation of the General Education Curriculum map. Until this semester, the map was an Excel file that documented which KU courses addressed each domain of General Education. With the help of Dr. Gregory Schaper’s CSC student Qian Weng, the spreadsheet is becoming a relational database.
The database will have a query function that allows GEAC to generate a stratified random sample of courses that address a particular domain. Once the database is complete, the next step will be to revisit the curriculum map selections made by the departments. The curriculum map must be constantly updated to make sure that all courses are accurately represented therein.

As we look to the future, GEAC will be compiling a year 3 report regarding Goal 3. In addition, we will be preparing an overall report that will look at the first three years of the committee’s work and our first complete picture of general education assessment at KU, as we will have looked at all three goals of the general education program.