## HAROLD WASHINGTON COLLEGE

### THE ASSESSMENT TIMES FALL, 2011

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### FROM THE CHAIR

### Busy as Usual...

As is our long-established custom, we have a number of different things we are working on currently. They are:

1. Data analysis and report writing for the Social Science Assessment.

Numbers are being crunched, and the writing p r o - cess has begun.

2. Distribution and dialogue about our Quantitative Reasoning Report.

We are working on an Assessment Brief - to p u t key findings in everyone's hands.

- 3. Website update. We have a whole new design, and we are uploading and organizing all kinds of things to show the substance of HWC's Assessment Committee work to the wider world.
- 4. Collecting, processing and grading 1,000 student writing samples for our Effective Writing assessment.
- 5. Future Planning we have reached a watershed mark, where we have assessed all seven of our General Education Goals and their respective student learning outcomes.
- 6. Reviewing our charge, results and the progress made on building HWC's assessment culture.

Committee members are permanently grateful to all the faculty, staff and students that consistently contribute to this important work.

Michael Heathfield

### COMMITTEE MEMBERS

Mike Heathfield - Chair Applied Sciences

Jen Asimow - Co Chair Applied Sciences

Jeffrey Swigart - Secretary Mathematics

> Samar Ayesh Physical Sciences

Margarita Chavez ELL/WL

Jacqueline Cunningham Social Science

> LaRhue Finney English

John Kieraldo Library

Lynnel Kiely Social Science

Chao Lu Mathematics

Charles McSweeney Advising

Willard Moody English, Speech & Theater

> Dave Richardson Humanities

Ray Tse Physical Sciences

Phillip Vargas Physical Sciences

Loretta Visomirskis English

Vincent Wiggins OIT

Matthew Williams ELL/WL

Allan Wilson Physical Sciences



CITY COLLEGES of CHICAGO Harold Washington Education that Works 30 E. Lake St. Chicago, IL 60601 312-553-5600/ hwc.ccc.edu

## A Tale of Two Reports — a Measure of Success

For some weird reason I am deeply engaged in thinking about how we can all improve student success and the strange conflation of pressure, politics and resistance that surrounds this important issue. I recently came across two reports that speak directly to the issues of student success and persistence in the community college context. One made me feel proud to be a teacher in a community college and helped me understand the detailed complex trajectories of our students and how significant such external issues are central to our success. The other made me angry and reminded me that the "academy" is, of course, just as political as every other aspect of our lives. Both pieces of research, incidentally, had some financial connection to that omnipotent billionaire college dropout Bill Gates.

"The Hidden Costs of Community Colleges" from the American Institutes for Research (October 2011) reports that almost four billion dollars in federal, state and local taxpayer monies is spent on first year, full-time students who drop out. So that reads like a \$4,000,000,000 failure, right?

In "Postsecondary Educational Trajectories of Urban Youth: Addressing Vulnerabilities and Barriers to Enrollment and Persistence" (August 2010) the Chapin Hall researchers looked at over 1,200 Chicago Public School students and mapped their pathways through high school graduation, college enrollment and persistence. One of the many interesting findings is that about the same number of CPS students enroll in 2-year colleges as in 4-year colleges. However, among CPS dropouts, three times as many enroll ina 2-year colleges. And CPS dropouts are much less likely to persist into their second year. They give considerable substance and detail to the factors that hinder success and make suggestions for how persistence and success can be improved.

So, back to our \$4,000,000,000 failure. If you read the whole report (it's very fancy with lovely color photographs, by the way) you will eventually make it to the Technical Appendix, where on the very last page, the report explains that their 27.8% dropout rate includes 16.7% of students who transferred to another institution! So in their world of metrics, students who don't exit with a final award from community college are failures, even when they have moved on to another HE institution. Is this linear thinking or limited thinking?

So this new definition of failure made me dig a little deeper. The lead author is a visiting scholar at the American Enterprise Institute and co-president of College Measures LLC, a metrics organization. The American Enterprise Institute describes itself as "a community of scholars and supporters committed to expanding liberty, increasing individual opportunity, and strengthening free enterprise." Ho, hum. These days, there is a lot of money in metrics attached to college completion and a great deal of lobbying and not-for-profit activity. And lost in all this noise is, of course, any mention, let alone acknowledgement of, who community college students predominantly are, the cultural, social and educational capital they have before they even walk through our doors. So we now embrace data-driven decisions to improve our performance. But please don't mention data on ever increasing poverty, limited and shrinking social mobility, the widening gulf between the rich and the poor in American society, disproportionate minority confinement, or the persistence of unemployment. These have nothing to do with college completion. Please help me wave the magic dust!

I am so glad that the Assessment Committee sticks to the assessment of student learning outcomes, and we spend positive collegial time invested in truly understanding why, how, and what our students learn. It's a big dirty mess of metrics out there in the 'unreal' world!

### **Effective Writing Assessment Fall, 2011**

"To write or not to write, that is the question..."

This fall, we are conducting our first assessment of effective writing across the HWC campus. As of this writing, we are anxiously awaiting the submission of 1000 writing samples and 1000 corresponding demographic questionnaires from many of the college's disciplines. This is exciting for several reasons. This is the first time we are conducting an assessment based on organic student work, and not a committee-generated/ company-generated tool. This also means that for many instructors limited class time was spent on the collection of assessment data. We are feeling very progressive in our new attempts at developing assessments!

The writing samples we have seen so far have ranged from letters, to essays, to research papers. The assignment topics vary greatly and will provide a challenge for our readers, especially when reading outside of our own disciplines. However, this is just the kind of exciting challenge that the assessment committee loves. The readers are scheduled to work through a training session designed to develop interrater reliability and validity for using the assessment rubric. The readers will spend their holiday break reading over 200 writing samples!

We look forward to sharing the data with you as it promises to be both informative and useful to all of our students and their future learning at HWC.

### **Quantitative Reasoning**

The final report for the 2009 Quantitative Reasoning is finished and on our new webpage at http:// sites.google.com/site/hwcassessment. As discussed in the last issue of the Assessment Times, there are many interesting results. For example, students who said they had never repeated a math class scored significantly higher on the competence section than students who said they had repeated a math class. Also, the assessment results showed a positive correlation between an appreciation of the complexity of mathematics and competence in mathematics.

Our students were weakest at understanding percentages. Here is the question on percents from the competence section that students scored the lowest on: "If 0.58% of all U.S. tax returns are audited, approximately how many returns are audited for each 1000 returns filed?" Here are the answer choices: 1, 60, 580, or 6. Do you know the answer? If not, and if it keeps you up at night, feel free to ask someone in the math department! Only 11% of students taking the assessment answered this question correctly.

So here is a little lesson on percentages that almost any class can use. What is the annual interest rate of a 2week payday loan of \$300 for which after the two weeks is up then \$30 of interest must be paid back along with the original \$300? First, realize that if the loan was for a time of an entire year, the interest rate would be 30/300 = 0.10 = 10%. Yet the loan we are discussing must be paid back in two weeks, which means it is a much worse loan with a much higher interest rate. In fact, there are 26 two-week periods in a year, and so the annual interest rate is 26 times worse than if it was a one-year loan. So the annual interest rate is  $10\% \ge 26 = 260\%$ . In fact, many two-week payday loans have interest rates of even higher than this. The Center for Responsible Lending at http:// www.responsiblelending.org gives much more information about payday loans, offering great discussion topics for many classes.

## Could the Assessment Committee's Newest Analyst be a Computer?

What if you were asked to find structure or patterns in



Many thanks to our student cartoonist - Arturo Lopez and John Masden of the Art Department

over one million individual measurements? How would you sift through such a vast amount of data and find anything meaningful? Well, the answer may surprise you. You are doing this right now. This article you are reading is most likely being displayed on a computer monitor with around one million pixels. Each of these pixels is displaying just one of over a million possible colors. However, you are not looking at single pixels, but looking for patterns among hundreds of pixels. So whether you read "apple" or "**apple**" your brain is identifying this familiar structure and mapping it to its respective concept.

Now, reading the word "apple" was not instinctual. You were not born with this ability. You had to learn how to read and to link this specific morpheme to the tangible fruit or to the booming computer company. However, when it comes to visually identifying this pattern in an image the human brain works amazingly well. In fact, 30% of the cerebral cortex is devoted to visual processing: ten times that of hearing. This allows us to process enormous amounts of visual information. This is the fundamental logic behind CAPTCHA security, the warped letters many websites require you to enter. Humans are excellent at deciphering these puzzles, while computers have a great deal of difficulty.

The "brain" of a computer, or more accurately the central processing unit, has a dramatically different architecture than that of a human brain. While computers are very poor at finding patterns in images, they excel at identifying patterns in large arrays of numbers. These large datasets are exactly what the Assessment Committee at Harold Washington College has been collecting every year in the form of surveys and test scores. This is why the Assessment Committee has decided to unleash the power of artificial intelligence to analyze the millions of data points collected over the last three years. Or more specifically, we are in the process of programming an artificial neural network to "think" and to identify patterns in our student's performance in mathematics, social science, and effective writing.

This type of artificial intelligence being designed is not new. It was first conceived in the late '40s and implemented in the '50s. However, it has not been until the last decade that computers have become fast enough for this technology to be moved out of theoretical computer science laboratories and implemented in industry and medicine. The Assessment Committee is supporting one of our new faculty in exploring these ideas with assessment data.

While partnering with the University of Chicago and Argonne National Laboratories, we are designing an artificial neural network that will run on one of our nation's most powerful super-computers, The Beagle, to look at a student's survey data and then at student outcomes. By repeating this process several thousand times, the computer will start to recognize patterns in the data and be able to predict student performance based on the survey information alone. If successful, these results may provide us with predictors of student success that have higher reliability and validity than our current models. This will ultimately help both our faculty and administrators better understand the needs of our students and shape policy to meet them.

### Almost 200 Years Later Sir William Curtis's Three Rs are Still the Fundamental Foundation for Education

One might expect that if a student self-identifies as being very comfortable in mathematics, that he or she would perform well on a mathematics examination. This seemed fairly straightforward when we were analyzing the mathematics assessment data for the quantitative reasoning report. However, none of us predicted that it would be as significant as the data showed. We saw a statistically significant increase in examination scores with each level that a student identified as her mathematics comfort. This was actually a better indicator than the number of formal classes a student enrolled in.

Naturally, when we analyzed the social science data we expected similar results. This was not the case. Although we have yet to dive in to how significant the differences are, at first glance it appears students who are comfortable reading, especially at the high levels required in literature courses, performed the best in a task where they were asked to identify a social science discipline being discussed in a written conversation.

In this instrument, students read a fabricated conversa

### HAROLD WASHINGTON COLLEGE

#### Assessment Committee

Michael Heathfield - Chair Applied Sciences Phone: 312 553-2679 E-mail: mheathfield@ccc.edu

Jen Asimow - Co Chair Applied Sciences Phone: 312 553-3087 E-mail: jasimow@ccc.edu

Jeffrey Swigart - Secretary Mathematics Phone: 312 553-3062 E-mail: jswigart@ccc.edu

http://sites.google.com/site/ hwcassessment/

Newsletter layout: John Kieraldo

### ASSESSMENT COMMITTEE CHARGE

The HWC Assessment Committee is dedicated to the improvement of student learning through the meaningful utilization of assessment data in an effort to support the HWC community towards the evolution of college curriculum. As outlined in this charge, the HWC Assessment Committee is committed to defining assessment at Harold Washington College, as well as establishing and ensuring that appropriate assessment procedures and practices are followed in collecting, reviewing, analyzing and disseminating information/data on assessment. Finally, the HWC Assessment Committee is responsible for providing a forum for dialogue regarding assessment issues to support a college culture, which includes the assessment process.

### **COMMITTEE MEMBERSHIP**

We are always looking for new faculty, students and staff to join in our exciting work. We meet every Wednesday from 3 p.m. to 4 p.m. in room 1032. All are welcome to join us. The Committee Charge states that there can only be two voting members from each department, but we are happy to involve as many people in our work as possible. If you want to discuss what this might involve or ask further questions, please contact Mike Heathfield (see contact info at left).

#### (William Curtis's Three Rs, continued)

tion between two social scientists. Each social scientist works in the same discipline, and the student had to determine which discipline they work in from key terms and concepts in the conversation. It could have been expected that the level of comfort students feel about a social sciences discipline would correlate with their performance in this examination as it had done in mathematics.

However, these results show evidence that students' level of comfort in reading and especially critical reading correlate best with this task, much more than their comfort with social science. This was a surprising result that we believe will engender a great deal of discussion in both the assessment committee and in the social sciences. The table opposite shows the respective strength of correlations between students who correctly identified the social science discipline from a written dialogue between two scientists and students' self-reported comfort level with key academic disciplines. Remember a value of 1.0 is perfect correlation while a value of 0 indicates that no correlation exists. A higher value indicates that there is stronger agreement between the datasets. In the assessment committee, we need to be careful that we are extracting the data we are trying to ascertain while properly controlling for other biases such as reading comprehension. Through a range of our assessments we have developed a stronger awareness of both validity and diversity issues that face our students.

Agreement between comfort with a discipline and performance on identifying a social science

Discipline	Correlation	
Arts & Humanities	0.344	
Reading	0.333	
Psychology	0.329	
Anthropology	0.325	
Sociology	0.325	
Geography	0.293	
History	0.279	
Writing	0.257	
Natural Sciences	0.240	
Political Science	0.214	
Economics	0.172	
Mathematics	0.166	

# Many thanks to those students and faculty who helped with the effective writing assessment!



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