CAWG SNAPSHOT OF STUDENT EXPERIENCES
LEARNING ANALYTICS:
USING DATA TO SUPPORT STUDENT LEARNING

University of Maryland   *2016 – Issue 2, September*

This Campus Assessment Working Group (CAWG) Snapshot reports findings on junior and senior students' perceptions of learning outcomes assessment. The data included represent results from the University of Maryland Student Survey (UMSS), an annual survey administered by the CAWG Assessing Campus Experiences Subgroup (ACES). Respondents complete the survey during the spring semester in Professional Writing courses.

During the spring 2015 semester, out of 3,272 juniors and seniors enrolled in spring semester Professional Writing courses 2,201 (67%) completed the survey.

Race/Ethnicity:
- 53% were White:U.S.
- 16% were Asian:U.S.
- 13% were Black or African American:U.S.
- 8% were Hispanic:U.S.
- 4% were Foreign
- 4% were Two or More Races:U.S.
- 2% were Unknown:U.S.
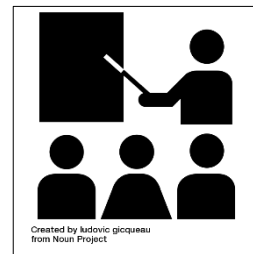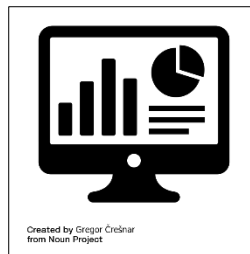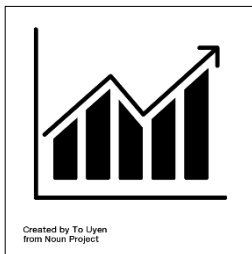- <1% were classified as Other, including American Indian and Hawaiian:U.S.

Gender:
- 53% were male
- 47% were female.

GPA:
- 31% had a GPA of 3.50 – 4.00 (the range for which students earn honors)
- 63% had a GPA of 2.30-3.49
- 6% had a GPA of 0.00 – 2.29 (the range for which students are flagged for advising intervention)

The demographic breakdown of respondents is representative of the university as a whole. The data below represent only the responses of survey respondents, not all UMD students; therefore, use caution when generalizing. Percentages may not sum to 100 due to rounding.

Learning Analytics 101

Created by To Uyen from Noun Project

Created by Gregor Črešnar from Noun Project

Created by ludovic gicqueau from Noun Project

What are learning analytics? Learning analytics use individual student data both descriptively and predictively. A university would use learning analytics with dashboards and other visualizations of data to help quickly identify success and risk factors that either help or hinder student progression and learning.

What's the benefit of using learning analytics? Learning analytics can help monitor the effectiveness of activities, teaching strategies, course structures, and delivery type. This can allow universities to bring together all of the factors that make learning successful—innovation, support, incentives, infrastructure and assessment—by enhancing the quality of student learning experiences; using technology to support teaching and learning; and monitoring the effectiveness of those systems and structures. *(Source: http://umdrightnow.umd.edu/news/umd-launches-hub-innovative-teaching-and-learning-strategies)*

Comfort With Learning Analytics and the University

Indicate the extent to which you agree or disagree with the following statements:

■ Agree or Strongly Agree   ■ Neither Agree nor Disagree   ■ Disagree or Strongly Disagree

I am comfortable with the University using data trends on ALL UMD STUDENTS (e.g., statistics on course pass/fail rates, course completion rates) to support student academic performance.

| 79% | 16% | 5% |

I am comfortable with the University using MY COURSE data (e.g., amount of time I've spent in CANVAS, my grades) to support my own academic performance.

| 66% | 20% | 14% |

I am comfortable with the University using MY DEMOGRAPHIC INFORMATION (e.g., transfer status, race/ethnicity, gender) in concert with my course data to support my own academic performance.

| 58% | 24% | 17% |

N= 2188-2190, depending on item

- Respondents reported varying degrees of comfort with the university using a range of data points. Respondents are more comfortable when the university uses data on all students (79% agree or strongly agree) than when using personal demographic data (58% agree or strongly agree).
- Note: The questions in the survey included general wording such as "support my academic performance" so student responses may be different had actual, potential interventions been described in more detail.
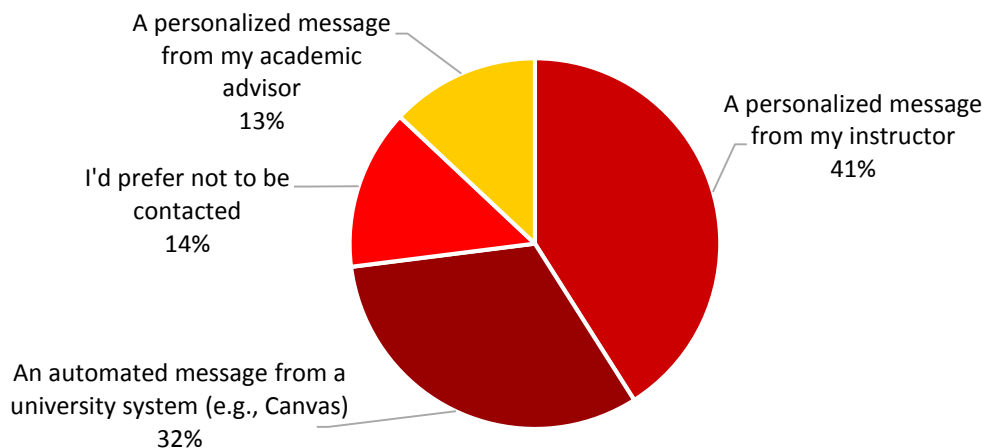
Questions to consider:
- To what degree are students comfortable with UMD using different data points (aggregated or personal) for different kinds of purposes besides supporting academic performance?
- Should we address the concerns of those who don't want their data used this way? Is there a way to use these data to empower those students?

Getting Course Performance Information

If my grades in a course were dropping, I would prefer UMD alert me by:

A personalized message from my academic advisor
13%

A personalized message from my instructor
41%

I'd prefer not to be contacted
14%

An automated message from a university system (e.g., Canvas)
32%

N= 2158

Using Learning Analytics Data

UMD should use data it has or collects about me to:

■ Agree or Strongly Agree   ■ Neither Agree nor Disagree   ■ Disagree or Strongly Disagree

Item	Agree or Strongly Agree	Neither Agree nor Disagree	Disagree or Strongly Disagree
Alert me to academic deadlines (e.g., "drop/add" and "drop with a W" end date)	92%	6%	2%
Alert me to scholarship opportunities	89%	8%	3%
Help me to improve my grades	79%	14%	7%
Offer course suggestions	75%	19%	6%
Suggest campus resources that would benefit me (e.g., tutoring services, Counseling Center)	70%	20%	10%
Alert me to activities I might enjoy	62%	24%	14%
Alert me when my grade is dropping	61%	20%	19%
Suggest study strategies that would benefit me	59%	22%	18%

N=2184 – 2192, depending on item

- More than half of respondents agree that UMD should use data it has or collects about them to offer individual suggestions about how to improve the college experience.
- Seventy-nine percent (79%) agree that they want help improving their grades but only 59% want suggested study strategies.
- Almost one in five respondents would not want UMD to use data it collects to alert them when a grade is dropping (19%) or suggest study strategies that would benefit them (18%).
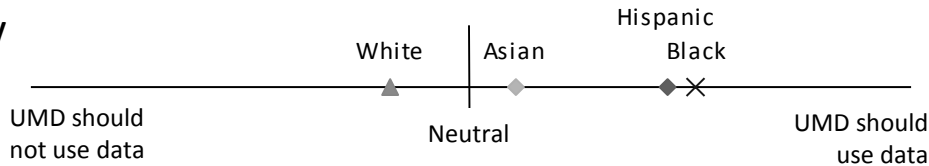
"UMD should use data it has or collects about me to:"

Responses broken down by race/ethnicity, gender, and GPA:

Race/ethnicity

White   Asian   Hispanic Black

UMD should
not use data

Neutral

UMD should
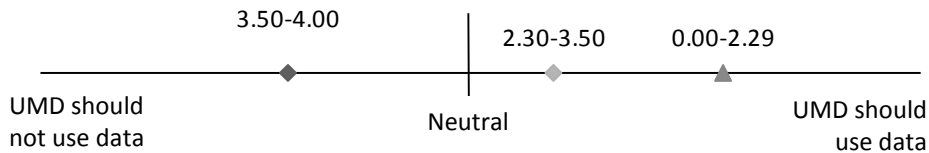use data

Each race group is statistically significantly different from each other race group (with the exception of Black and Hispanic respondents, where there was no statistically significant difference). in their responses to questions related to how UMD should use data it has or collects about them. Students who identify as Black or African American, Hispanic, or Asian tend to be more willing to share data, and students who identify as White tend to be less willing.

Gender

Male   Female

UMD should
not use data

Neutral
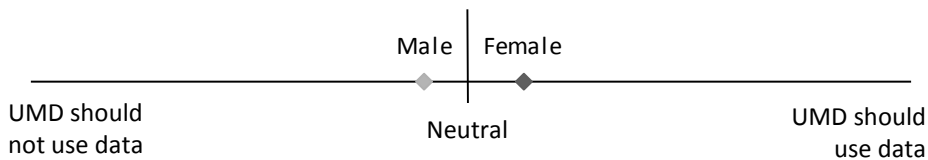
UMD should
use data

Males and females are statistically significantly different from each other in their responses to questions related to how UMD should use data it has or collects about them. Females tend to be more willing to share data, and males tend to be less willing.

GPA

3.50-4.00   2.30-3.50   0.00-2.29

UMD should
not use data

Neutral

UMD should
use data

Each GPA group is statistically significantly different from other GPA groups in their responses to questions related to how UMD should use data it has or collects about them. Students with higher GPAs tend to be less willing to share data, and students with lower GPAs tend to be more willing.
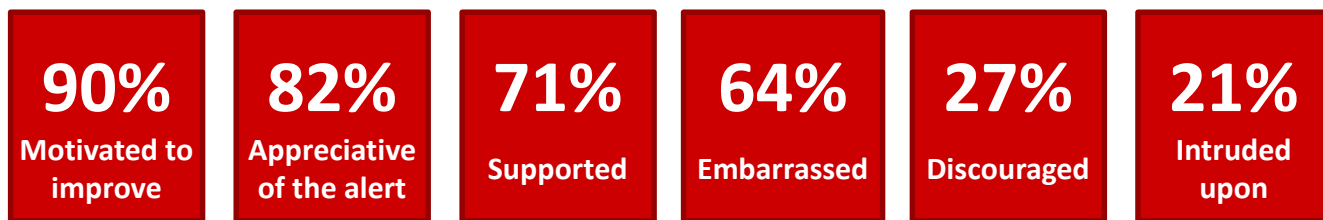
Questions to consider:
- How can UMD use data collected on students to support them without overwhelming them or encouraging dependence on automatic notices?
- How can we reach all students in a way that's helpful? How can we share information in a beneficial way with students who don't want these interventions?
- How can data inform us on who is likely and less likely to ask for help? What are some outreach strategies? Can these data give us information on how we can contextualize our outreach?

How to read MANOVA visualizations in this report: This visualization was created using multivariate analysis of variance (MANOVA), which is a procedure that combines variables to maximize group differences. When the labeled dots are farther to the right side of the line, the respondent groups tended to agree that UMD should use their data. When the labeled dots are farther to the left side of the line, the respondent groups tended to disagree that UMD should use their data.

Reacting to Performance Information

If I received a message that I was not doing as well as I thought I was in a class, I would feel: (Students could select all that apply.)

90% Motivated to improve	**82%** Appreciative of the alert	**71%** Supported	**64%** Embarrassed	**27%** Discouraged	**21%** Intruded upon

N= 2145 – 2163, depending on item

- While almost two thirds (64%) would feel embarrassed, under one-third (27%) predict being discouraged, which may indicate resilience. Only one in five indicated that this kind of intervention would feel intrusive (21%). Note: students were instructed to "select all that apply," so they could have felt embarrassed and supported at the same time, for example.

Responses broken down by race, gender, and GPA:

	All Respondents	Race				Gender		GPA		
		White	**Black**	**Asian**	**Hispanic**	**F**	**M**	**low** 0.0 - 2.29	**mid** 2.3 - 3.49	**high** 3.5 - 4.0
Motivated to improve	90%	89%	-	-	-	-	-	96%	-	88%
Appreciative of the alert	82%	78%	89%	-	90%	-	-	91%	83%	76%
Supported	71%	68%	80%	-	81%	-	-	83%	-	66%
Embarrassed	64%	-	52%	68%	-	70%	58%	-	-	-
Discouraged	27%	-	21%	32%	-	31%	25%	-	-	-
Intruded upon	21%	23%	12%	-	-	-	-	-	20%	26%

Note: Numbers that appear are statistically significantly different than how "all respondents" answered.

- **Race/ethnicity**: Asian respondents (68%) are more likely to feel "embarrassed" and Black or African American respondents (52%) are less likely as compared to all respondents (64%).
- **Gender**: Female respondents (70%) are more likely to feel "embarrassed" and male respondents (58%) are less likely as compared to all respondents (64%).
- **GPA**: Respondents with low GPAs tend to feel positively ("motivated to improve," "appreciative of the alert," "supported") than students with mid or high GPAs as a result of the intervention.

Questions to consider:
- How can we structure messages to students so that fewer would feel embarrassed, discouraged, intruded upon, and are still able to move in a positive direction?

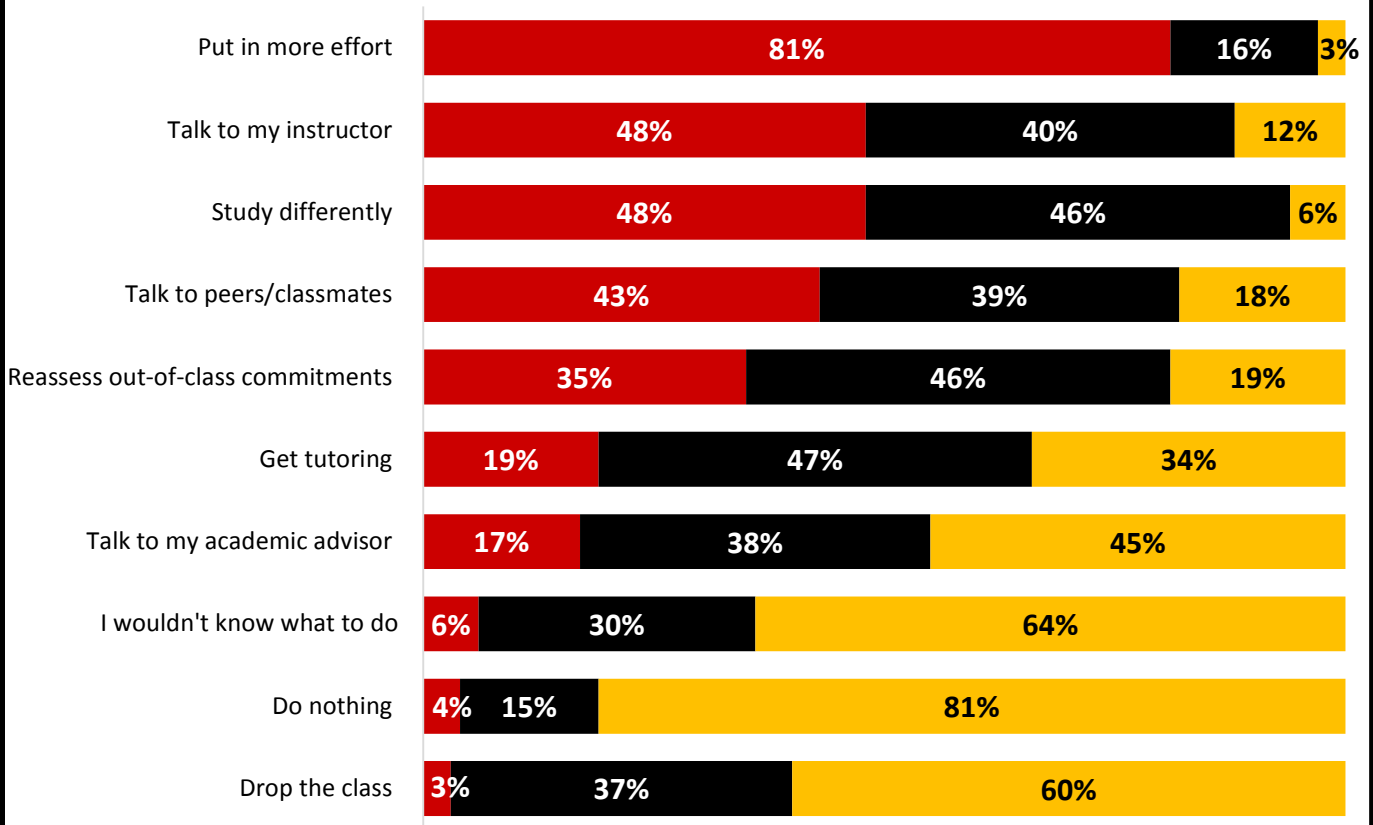*How to read heat maps in this report: A heat map is a table that has colors in addition to or in place of numbers. Colors correspond to the level of the measurement. It's useful for finding highs and lows and sometimes, patterns. In this heat map, the darker red shades indicate where respondents tended to show more agreement and the lighter yellow shades indicate where they tended to show less.*

Taking Action on Course Performance Information

If I received a message that I was not doing as well as I thought I was in a class, I would:

■ Very likely   ■ Somewhat likely   ■ Not at all likely

Action	Very likely	Somewhat likely	Not at all likely
Put in more effort	81%	16%	3%
Talk to my instructor	48%	40%	12%
Study differently	48%	46%	6%
Talk to peers/classmates	43%	39%	18%
Reassess out-of-class commitments	35%	46%	19%
Get tutoring	19%	47%	34%
Talk to my academic advisor	17%	38%	45%
I wouldn't know what to do	6%	30%	64%
Do nothing	4%	15%	81%
Drop the class	3%	37%	60%

N=2165-2187, depending on item

- More than four out of five respondents would put in more effort (81%). *Note: That effort might look for different students as some might outwardly seek help from others while some might reflect on their own study practices.*

Questions to consider:
- Forty-eight percent (48%) would talk to an instructor, 43% would talk to peers, but only 17% would talk to academic advisors. What does this say about students' perceptions of the role of instructors, advising staff, and peers in helping students improve academic performance?
- What are best practices for surrounding staff helping students and empowering students to help themselves?

Responses broken down by race/ethnicity, gender, and GPA:

	All respondents	Race				Gender		GPA		
		White	Black	Asian	Hispanic	F	M	low 0.0 - 2.29	mid 2.3 - 3.49	high 3.5 - 4.0
Put in more effort	81%	<u>78%</u>	<u>89%</u>	-	-	<u>82%</u>	<u>79%</u>	-	-	-
Study differently	48%	<u>43%</u>	<u>65%</u>	-	-	<u>51%</u>	<u>45%</u>	<u>58%</u>	-	<u>44%</u>
Talk to my instructor	48%	-	<u>59%</u>	-	-	<u>54%</u>	<u>44%</u>	-	-	-
Talk to peers/classmates	43%	-	-	<u>49%</u>	-	-	-	-	-	-
Reassess out-of-class commitments	35%	<u>30%</u>	<u>51%</u>	-	<u>43%</u>	-	-	-	-	<u>31%</u>
Get tutoring	19%	<u>16%</u>	<u>33%</u>	-	-	<u>23%</u>	<u>16%</u>	<u>31%</u>	<u>20%</u>	<u>13%</u>
Talk to my academic advisor	17%	<u>15%</u>	<u>25%</u>	-	-	<u>20%</u>	<u>15%</u>	<u>31%</u>	-	<u>13%</u>
I wouldn't know what to do	6%	-	-	-	-	-	-	-	-	-
Do nothing	4%	-	<u>2%</u>	-	<u>1%</u>	-	-	-	-	-
Drop the class	3%	-	<u>6%</u>	-	-	-	-	<u>7%</u>	-	<u>2%</u>

Note: Numbers that appear indicate a statistically significantly difference between that cell and how "all respondents" answered. See page 5 for a description of how to read heat maps

- Generally, members of minority groups, women, and students with GPAs below 2.29 are more likely to take actions than students who are White, male or have GPAs above 3.50.
- **Race/ethnicity**: For most differences by race, Black or African American, Asian, and Hispanic students are more likely to address the statement, while White students are less likely to address the statement.
- **Gender**: More than expected female respondents were very likely to put in more effort (82%), study differently (51%), talk to their instructor (54%), get tutoring (23%), and talk to their academic adviser (20%), than male respondents.
- **GPA**: More than expected respondents with GPAs below 2.29 agreed that they would study differently (58%), get tutoring (31%), talk to their academic advisor (31%), or drop the course (7%), than respondents with GPAs above 3.5.

Note: Because UMD does not currently use learning analytics to target specific student populations for support, the questions asked in this survey are very general and students may have interpreted them in different ways. Student answers may have changed had the survey been more descriptive. For example, for the question on page 3, "If my grades in a course were dropping, I would prefer UMD alert me by: (Select one)," one answer option was a "personalized message from my instructor." As UMD becomes more active in the learning analytics sphere, a best practice would be to encourage messages to include information about student performance as well as resources to take action. For example, a personalized message from an instructor would not just inform the student of a dropping grade but might read, "I saw you didn't score as highly on this test as you usually do. I'm sorry to see that. Would you consider coming to an extra study session?"

The Campus Assessment Working Group (CAWG) regularly gathers and exchanges information about UMD student and alumni experiences. The group is charged with developing a campus "Culture of Evidence" in which data and assessment can inform campus decision making. Its three subgroups focus on freshman experiences, junior/senior student experiences, and retention and completion efforts. For more information, to view past reports, or to join a CAWG subgroup, please visit www.umd.edu/cawg.