

Results from the MAP-Works Survey of First-year Undergraduates: Fall 2010

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GVSU Participated in the MAP-Works program for the second time in the Fall semester of 2010. MAP-Works is an online student retention tool developed at Ball State University and administered by Educational Benchmarking (EBI). The core of MAP-Works is a student questionnaire that solicits information about students' activities, motivations, impressions, and plans. These responses are combined to assess students' individual risk factors for attrition from college. Each student who completes the survey is immediately presented with an evaluation report that identifies areas of risk and resources that are available to the student to ameliorate that risk. In addition, response data are available online to advisors (both faculty and professional staff) with indicators of which students are at greatest risk (and presumably have greatest need for supportive intervention). MAP-Works is primarily a tool to assess individual risks and facilitate contact between the students and support systems to help them persist. Nevertheless, it also creates a pool of student data that is valuable in the aggregate for assessing the needs and capabilities of GVSU students. This report presents a summary of that aggregate information in three contexts: in comparison to fall 2009 data; in comparison with peer institutions; and in relation to selected "outcome" measures.

The population and response rates: GVSU invited students to participate in MAP-Works surveys for first-year and second-year undergraduate students. Both groups of students were invited to complete the online survey between Sep 13 and Oct 8, 2010. This corresponds to the 3rd through 6th weeks of the fall semester. This report concerns itself only with responses of first year students. Results from the second-year survey are presented elsewhere.

All GVSU students who were enrolled as degree-seeking undergraduates in the Fall 2010 semester and whose first term at GVSU was in Winter 2010 or later were invited to participate. This amounted to 4,600 students, of whom 3,286 (71%) completed the questionnaire. The following table summarizes demographic characteristics of respondents and non-respondents:

	% Responding
Total	71.4%
Sex*	
Female	76.5%
Male	64.2%
Ethnicity*	
Black or African American	68.6%
American Indian or Alaskan Native	57.1%
Asian or Pacific Islander	59.6%
Hispanic or Latino	68.7%
White	72.5%
Unspecified	52.9%
More than one ethnicity	69.9%
On-campus Residence*	
On-campus	91.9%
Off-campus	25.4%
Major Program	
Declared and admitted	70.6%
Pre-major (e.g. pre-Business, pre-Nursing)	71.2%
Undeclared	74.5%
First Generation College Student*	
No	75.6%
Yes	66.3%
* Association between this characteristic and participation is statistically significant ($\alpha = 0.05$)	

In addition to the significant demographic differences above, participation was also significantly related to grades and persistence. Those who completed the survey got better fall grades (2.94 GPA vs. 2.64) and were more likely to return to GVSU in the winter term (94.6% vs. 88.9%) than non-respondents. These differences are presumably indicators of response bias, rather than evidence of benefits of MAP-Works.

Peers: This report includes data from 3 groups of comparison institutions that also participated in MAP-Works in Fall 2010. The first group consists of the 6 participating schools that are most like GVSU in size, sector, and undergraduate student composition. This group’s average scores are labeled as “6 peers” in tables that follow. The second peer group includes all participating schools with the same basic Carnegie Classification (Masters-L) as GVSU (see Appendix A for full list). The third comparison group includes all MAP-Works participants (Appendix B).

GVSU outcome variables: This report also investigates relationships between survey responses and 3 “outcomes”: final fall 2010 GPA; enrollment in Winter 2011 classes at GVSU; and satisfaction with GVSU. Satisfaction is measured by a composite of items within the MAP-Works survey itself. Please note that no effort has been made here to study or control for the results of MAP-Works itself. To the extent that the project is working as intended – triggering behavioral adjustments by students or supportive contact by faculty or staff – the relationships to GPA and retention reported here may be confounded by those intervening steps.

All associations marked with a “*” are statistically significant with $p \leq 0.05$.

Results:

MAP-Works Factors: The developers of the MAP-Works survey have identified 19 multi-item scales that they believe measure separate (but related) risk factors for attrition among new undergraduate students. Each scale is an unweighted average of responses to two or more survey questions, each of which uses a seven-point ordinal scale. As a result, all the factor scores are scaled from 1 to 7, and EBI has set an arbitrary benchmark of 5.5 for each scale. The specific questions that contribute to each factor are described in Appendix C. The table below summarizes GVSU students’ responses on each of the scales in the past two years, responses of peer students, and relationships between the factors and grades, retention and satisfaction.

GVSU 2010	GVSU 2009	6 Peers	Masters -L	All Schools	GPA Correlation	Retention OR	Satisfaction Correlation†	
Factor 1. Commitment to the Institution	6.18	6.36*	6.28*	6.21	6.31*	0.045*	1.761*	0.540*
Factor 2. Self-Assessment: Communication Skills	5.27	5.22	5.16*	5.14*	5.17*	0.066*	1.132	0.104*
Factor 3. Self-Assessment: Analytical Skills	5.34	5.29*	5.06*	5.02*	5.13*	0.102*	1.101	0.111*
Factor 4. Self-Assessment: Self-Discipline	5.91	5.88	5.92	5.91	5.89	0.152*	1.242*	0.216*
Factor 5. Self-Assessment: Time Management	5.54	5.42*	5.48*	5.44*	5.43*	0.218*	1.097	0.201*
Factor 6. Financial Means	5.06	5.19*	5.02	4.96*	5.00*	0.070*	1.098	0.059*
Factor 7. Basic Academic Behaviors	6.11	6.05*	6.02*	6.03*	6.03*	0.285*	1.291*	0.191*
Factor 8. Advanced Academic Behaviors	5.04	4.67*	4.99*	5.06	5.03	0.147*	0.976	0.183*
Factor 9. Academic Self-Efficacy	5.39	5.23*	5.33*	5.32*	5.32*	0.160*	1.200*	0.252*
Factor 10. Peer Connections	5.35	5.46*	5.66*	5.51*	5.50*	-0.031	1.340*	0.414*
Factor 11. On-Campus Living: Social Aspects	5.07	5.08	5.44*	5.38*	5.34*	-0.039*	1.332*	0.408*
Factor 12. On-Campus Living: Environment	5.82	5.75*	5.84	5.82	5.82	0.024	1.505*	0.444*
Factor 13. On-Campus Living: Roommate Relationship	6.28	5.94*	6.19*	6.22*	6.22*	0.014	1.021	0.216*

	GVSU 2010	GVSU 2009	6 Peers	Masters -L	All Schools	GPA Correlation	Retention OR	Satisfaction Correlation‡
Factor 14. Off-Campus Living: Environment	6.11	6.20	6.12	6.00	5.99*	0.106*	1.687*	0.258*
Factor 15. Homesickness: Separation†	3.52	3.56	3.57	3.57	3.61*	0.021	1.136*	0.150*
Factor 16. Homesickness: Distressed†	5.57	5.72*	5.58	5.53	5.58	0.064*	1.384*	0.321*
Factor 17. Academic Integration	5.78	5.71*	5.79	5.82*	5.80	0.180*	1.291*	0.381*
Factor 18. Social Integration	5.39	5.48*	5.65*	5.57*	5.57*	0.021	1.460*	0.684*
Factor 19. Satisfaction with Institution	5.67	5.64	5.72*	5.61*	5.67	0.060*	1.636*	1.000
<p>* Asterisks by 2009 or peer factor scores indicate that the score is significantly different from GVSU's 2010 score. Asterisks by correlation and odds ratio values mean that the factor is significantly associated with the given outcome.</p> <p>† All factors are scaled so that higher values are "better", so higher values on homesickness factors mean students indicate <i>less</i> negative impact of homesickness.</p> <p>‡ The satisfaction measure used is Factor 19: "Satisfaction with Institution"</p>								

Trend comparisons: Scores for 2010 students were significantly higher than 2009 students mostly in the measures of academic behaviors and preparedness (analytic skills; time management; basic academic behaviors; advanced academic behaviors; academic self-efficacy; academic integration) and in ratings of on-campus living environment and roommate relations. However, scores decreased significantly several in social aspects (commitment to the institution; peer connections; distress due to homesickness; and social integration) and in financial confidence.

Peer Comparisons: Similarly to 2009, GVSU students score near or above peer students on most scales related to academic behaviors and confidence, including communication skills, analytic skills, time management, basic academic behaviors, and academic self-efficacy. They also reported relatively high levels of confidence that they could afford college and satisfaction with their on-campus roommate situations.

Unfortunately, GVSU students scored lower than peers on several other measures, including commitment to the institution, peer connections, social aspects of on-campus residence, and social integration. These factors, especially "commitment to the institution" are closely related to student persistence and satisfaction, so they represent areas where GVSU particularly needs to concentrate efforts.

GVSU achieved mixed results relative to peers with respect to student satisfaction. Our first-year students expressed significantly less overall satisfaction than students at the 6 closest peers, but were more satisfied than the average for peers at all schools in our Carnegie classification.

Fall Grades: Most of the factors show some relationship with students' grades, but the strongest correlation by far is with "Basic Academic Behaviors". That is not too surprising, since that factor measures such behaviors as attending class, taking notes, turning in homework and studying. Other factors that have relatively strong associations with grades are "Self-Assessment: Time Management", "Academic Integration", "Academic Self-Efficacy", "Self-Assessment: Self-Discipline", "Advanced Academic Behaviors". However, since all of these factors are inter-related, a multivariate analysis provides a more accurate picture of the relative value of the different factors in predicting grades. When considered jointly, the most important predictive factors for GPA are:

Factor	Standardized Coefficient
Basic Academic Behaviors	0.265
Peer Connections	-0.108
Self-Assessment: Time Management	0.084
Self-Assessment: Analytical Skills	0.084

Note that negative coefficients mean that higher factor scores are associated with lower grades (after controlling for other significant factors). Thus, given similar academic behaviors and skills, stronger peer connections are actually associated with lower average grades.

Fall-to-Winter Retention: As with GPA, most of the factors are associated with fall-to-winter retention to some degree. The factors with the strongest bivariate associations with retention are “Commitment to the Institution”, “Off-Campus Living Environment”, “Satisfaction with the Institution”, “On-Campus Living: Environment”, and “Social Integration”. (Odds ratios are the percentage increase in the probability of an event associated with a one unit increase in the associated variable. For example, the odds ratio shown for “Commitment to the Institution” -- 1.761 -- means that a student with a factor score of 6 is 1.761 times as likely to be retained as a student with a score of 5.)

In a multivariate model, the factors that combine to significantly predict retention are:

Factor	Standardized Coefficient
Commitment to the Institution	0.284
Homesickness: Distressed	0.205
Advanced Academic Behaviors	-0.193
Peer Connections	0.163
Basic Academic Behaviors	0.142

As a reminder, the construction of the homesickness items (along with the positive coefficient) means that less distress due to homesickness is associated with better retention, while the negative coefficient for “Advanced Academic Behaviors” means that reporting more of these behaviors (such as participating in class, communicating with professors, studying on a schedule, doing readings in the day before class) is associated with lower retention.

Student Satisfaction: All of the MAP-Works factor scores are correlated to satisfaction, which conforms to the survey’s theoretic intentions. The strongest bivariate associations with satisfaction are those with “Social Integration”, “Commitment to the Institution”, and “On-Campus Living: Environment.” A multivariate model to predict satisfaction indicates that the strongest predictive factors are:

Factor	Standardized Coefficient
Social Integration	0.539
Commitment to the Institution	0.281
Academic Integration	0.115
Homesickness: Distress	0.073

For students who live in on-campus housing, the residence hall environment had a positive effect similar to that of (lack of) homesickness.

Summary: MAP-Works survey results indicate that our first-year students are relatively strong and improving in academic skills, behaviors, and self-confidence. However, their social experiences and commitment to staying at GVSU are relatively weak compared to peers at other participating schools, and may have declined since last year. The information provided in the survey has genuine value for predicting short term academic achievement and persistence. This means that it can be an effective tool for targeting programs designed to improve student success.

MAP-Works Risk Indicator:

MAP-works' interface for faculty, advisors, and administrators emphasizes a simplified diagnostic for identifying students at risk. Each student who completes the questionnaire is assigned to a risk category for easy triage. GVSU data indicate that these levels do differentiate levels of attrition risk and grade performance.

	N	Fall-to-winter Retention	Fall GPA
Green – “Low risk for retention or poor academic performance”	1205	97.8%	3.02
Yellow – “Moderate risk for retention or poor academic performance”	1747	94.4%*	2.90*
Red – “High risk for retention or poor academic performance”	331	84.9%*	2.88
Red x2 – “Extremely high risk for retention or poor academic performance”	3	33.3%*	2.46*
* Asterisk indicates retention rate or GPA is significantly lower than the comparable figure for the risk group immediately above it.			

Other Map-Works Items:

	GVSU 2010	GVSU 2009	6 Peers	Masters-L	All Schools
I have selected a specific major	52.1%	47.8%*	47.6%*	52.3%	52.0%
What is the highest level of education you aspire to achieve?: Graduate degrees	62.9%	61.5%	57.6*	59.7*	62.1
If you decide to transfer to another institution, what would be the most likely cause?					
Wanted a different location	25.1%	25.3%	32.7%*	31.1%*	30.9%*
Wanted a different academic program	13.8%	12.2%	15.3%	14.9%	13.1%
Financial issues	12.3%	10.5%	9.3%*	10.7%	12.6%
Wanted a different academic environment	10.6%	10.5%	8.7%	8.0%*	9.7%
Wanted a different social environment	20.5%	24.2%	15.6%*	16.6%*	16.1%*
Pursue a degree not offered at my institution	7.4%	4.8%	6.7%	7.0%	6.2%
What grades do you think you'll earn this term? Mostly A	41.3%	37.9%*	30.6%*	32.1%*	34.6%*
All or nearly all of my financial need is being met through financial aid (loans, grants, scholarships).	25.9%		21.7%*	27.3%	24.6%
How many hours, on average, do you expect to spend studying for a test in college? 3 hours or more	57.2%	58.6%	47.3%*	51.7%*	54.4%*
I have attended all my classes this term	66.0%	66.1%	56.8%*	60.5%*	60.3%*
* Percentage is significantly different from GVSU's 2010 percentage.					

This table indicates that GVSU students have relatively high expectations of academic achievement compared to students at other MAP-Works schools. They also have comparatively strong study and attendance habits. Among those who are considering leaving GVSU, the social environment is a predominant factor.