Results from the MAP-Works Survey of Second-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 two contexts: in comparison to fall 2009 data 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 second-year students. Results from the first-year survey are presented elsewhere.

All GVSU students who were enrolled as degree-seeking undergraduates in the Fall 2010 semester, who were classified as underclassmen, whose first term at GVSU was prior to Winter 2010, and who had completed fewer than 4 GVU semesters were invited to participate. This amounted to 3,285 students, of whom 1,050 (32%) completed the questionnaire. This is considerably lower than the response rate among first-year students (71%). The following table summarizes demographic characteristics of respondents and non-respondents:

	% Responding
Total	32.0%
Sex*	
Female	37.1%
Male	30.8%
Ethnicity*	
Black or African American	47.1%
American Indian or Alaskan Native	16.7%
Asian or Pacific Islander	27.4%
Hispanic or Latino	30.2%
White	31.3%
Unspecified	21.0%
More than one ethnicity	36.8%
On-campus Residence*	
On-campus	74.4%
Off-campus	14.2%
Major Program*	
Declared and admitted	34.4%
Pre-major (e.g. pre-Business, pre-Nursing)	28.6%
Undeclared	20.6%
First Generation College Student	
No	31.9%
Yes	32.0%
* Association between this characteristic and participation is statistically significant (α = 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 (3.08 GPA vs. 2.88) and were more likely to return to GVSU in the winter

term (97.4% vs. 95.2%) than non-respondents. These differences are presumably indicators of response bias, rather than evidence of benefits of MAP-Works.

GVSU outcome variables: This report 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 ≤ 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 and relationships between the factors and grades, retention and satisfaction.

	GVSU 2010	GVSU 2009	GPA Correlation	Retention OR	Satisfaction Correlation‡
Factor 1. Commitment to the Institution	6.20	6.47*	0.072*	1.765*	0.386*
Factor 2. Self-Assessment: Communication Skills	5.36	5.24*	0.121*	1.174	0.200*
Factor 3. Self-Assessment: Analytical Skills	5.32	5.30	0.145*	1.215	0.124*
Factor 4. Self-Assessment: Self-Discipline	5.88	5.85	0.214*	1.644*	0.252*
Factor 5. Self-Assessment: Time Management	5.68	5.54*	0.243*	1.441*	0.176*
Factor 6. Financial Means	4.89	4.87	0.175*	1.430*	0.124*
Factor 7. Basic Academic Behaviors	6.16	6.11	0.303*	1.799*	0.134*
Factor 8. Advanced Academic Behaviors	5.11	4.68*	0.137*	1.167	0.173*
Factor 9. Academic Self-Efficacy	5.43	5.31*	0.203*	1.512*	0.317*
Factor 10. Peer Connections	5.45	5.49	0.055	1.256	0.395*
Factor 11. On-Campus Living: Social Aspects	4.44	4.42	0.005	1.077	0.259*
Factor 12. On-Campus Living: Environment	6.09	6.08	0.011	1.340	0.381*
Factor 13. On-Campus Living: Roommate Relationship	6.31	6.15*	0.090	1.679*	0.312*
Factor 14. Off-Campus Living: Environment	6.18	6.11	.	.	.

	GVSU 2010	GVSU 2009	GPA Correlation	Retention OR	Satisfaction Correlation‡
Factor 15. Homesickness: Separation†	4.11	3.94*	0.017	0.927	0.156*
Factor 16. Homesickness: Distressed†	5.88	5.97	0.042	1.234	0.303*
Factor 17. Academic Integration	5.80	5.69*	0.183*	1.544*	0.393*
Factor 18. Social Integration	5.57	5.56	0.014	1.238	0.677*
Factor 19. Satisfaction with Institution	5.76	5.64*	0.046	1.176	1.000

* 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.

† All factors are scaled so that higher values are "better", so higher values on homesickness factors mean students indicate *less* negative impact of homesickness.

‡ The satisfaction measure used is Factor 19: "Satisfaction with Institution"

Trend comparisons: Scores for 2010 students were significantly higher than 2009 students for about ½ of the measures, including overall satisfaction, academic skills and behaviors (communication skills; time management; advanced academic behaviors; academic integration) and a few social scales (roommate relationship; homesickness: separation). The remaining scale scores were stable from 2009 to 2010 except for commitment to the institution. Unfortunately, commitment to the institution is one of the top indicators of attrition risk, so the decline is a bad omen for GVSU retention.

Fall Grades: All of the factors purporting to academic skills are positively related to grades, while the social scales are independent of grades. This supports the "face validity" to the MAP-Works scales. The strongest bivariate correlation is with "Basic Academic Behaviors", and time management and self-discipline also have relatively high correlations. 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	0.284
Financial Means	0.137
Satisfaction	-0.125
Self-Assessment: Analytical Skills	0.112

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, greater satisfaction with GVSU is actually associated with lower average grades.

Fall-to-Winter Retention: About half of the factors are significantly associated with fall-to-winter retention. The factors with the strongest bivariate associations with retention are "Basic Academic Behaviors", "Commitment to the Institution", "On-Campus Living: Roommate Relationship", and "Self-Assessment: Self-Discipline". (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" -- 1.765 -- means that a student with a factor score of 6 is 1.765 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
Self Assessment: Self-Discipline	0.270
Commitment to the Institution	0.224

Student Satisfaction: All of the MAP-Works factor scores are correlated to satisfaction, which conforms to the survey's theoretic intentions. The strongest bivariate association with satisfaction among second-year students is "Social Integration." "Peer Connections", "Academic Integration", and "Commitment to the Institution" also have relatively strong correlations with satisfaction. A multivariate model to predict satisfaction indicates that the strongest predictive factors are:

Factor	Standardized Coefficient
Social Integration	0.626
Commitment to the Institution	0.130
Academic Integration	0.085

Summary: MAP-Works survey results indicate that our second-year students are improving in academic skills, behaviors, and self-confidence. However, their commitment to staying at GVSU is lower than that reported by last year's respondents. The predictive value of the factor scores with respect to second-year outcomes is statistically significant, but generally weaker than that observed for the first-year MAP-Works questionnaire.

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 but have limited effectiveness for predicting grade performance among second-year students.

	N	Fall-to-winter Retention	Fall GPA
Green – "Low risk for retention or poor academic performance"	404	99.5%	3.32
Yellow – "Moderate risk for retention or poor academic performance"	500	96.8%*	2.92*
Red – "High risk for retention or poor academic performance"	144	97.4%	2.94
Red x2 – "Extremely high risk for retention or poor academic performance"	3	66.7%*	2.69
* Asterisk indicates retention rate or GPA is significantly lower than the comparable figure for the risk group immediately above it.			

Appendix A: Factor Components

Factor 01 . Commitment to the Institution
- To what degree are you committed to completing your: College degree at this institution
- To what degree do you intend to come back to this institution for the next: Term
- To what degree do you intend to come back to this institution for the next: Academic year

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Factor 02 . Self-Assessment: Communication Skills
- Self-Assessment of Academic Skills - How would you rate yourself on the following skills: Writing composition
- Self-Assessment of Academic Skills - How would you rate yourself on the following skills: Reading comprehension
- Self-Assessment of Academic Skills - How would you rate yourself on the following skills: Ability to verbalize your ideas
- Self-Assessment of Academic Skills - How would you rate yourself on the following skills: Public speaking

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Factor 03 . Self-Assessment: Analytical Skills
- Self-Assessment of Academic Skills - How would you rate yourself on the following skills: Math ability
- Self-Assessment of Academic Skills - How would you rate yourself on the following skills: Computer skills
- Self-Assessment of Academic Skills - How would you rate yourself on the following skills: Problem-solving skills

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Factor 04 . Self-Assessment: Self-Discipline
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Is self-disciplined
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Is a self-starter
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Follows through with what you say you're going to do
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Is dependable

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Factor 05 . Self-Assessment: Time Management
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Balances time between classes and other activities (work, student activities, etc.)
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Shows up on time
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Does your work before you play
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Plans out your time
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Sticks to your time plan
- Self-Assessment of Management Skills - To what degree are you the kind of person who: Makes "to-do lists"

Factor 07 . Basic Academic Behaviors
- Basic Academic Behaviors - To what degree are you the kind of person who: Attends class
- Basic Academic Behaviors - To what degree are you the kind of person who: Takes good notes in class
- Basic Academic Behaviors - To what degree are you the kind of person who: Turns in required homework assignments
- Basic Academic Behaviors - To what degree are you the kind of person who: Records your assignments and tests in a calendar
- Basic Academic Behaviors - To what degree are you the kind of person who: Spends sufficient study time to earn good grades

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Factor 08 . Advanced Academic Behaviors:
- Advanced Academic Behaviors - To what degree are you the kind of person who: Participates in class
- Advanced Academic Behaviors - To what degree are you the kind of person who: Communicates with instructor outside of office hours
- Advanced Academic Behaviors - To what degree are you the kind of person who: Studies in a place where you can avoid distractions
- Advanced Academic Behaviors - To what degree are you the kind of person who: Studies on a regular schedule
- Advanced Academic Behaviors - To what degree are you the kind of person who: Reads the assigned readings within a day before class
- Advanced Academic Behaviors - To what degree are you the kind of person who: Works on large projects well in advance of the due date

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Factor 09 . Academic Self-Efficacy
- Academic Self-Efficacy - To what degree are you certain that you can: Do even the hardest work assigned in your courses
- Academic Self-Efficacy - To what degree are you certain that you can: Do well on all problems and tasks assigned in your courses

- Academic Self-Efficacy - To what degree are you certain that you can: Do well in your hardest course
- Academic Self-Efficacy - To what degree are you certain that you can: Persevere on class projects even when there are challenges

Factor 10 . Peer Connections
- Peer Connections - On this campus, to what degree are you meeting people: Who share common interests with you
- Peer Connections - On this campus, to what degree are you meeting people: Who include you in their activities
- Peer Connections - On this campus, to what degree are you meeting people: You enjoy spending time with
- Peer Connections - On this campus, to what degree are you meeting people: You like

Factor 11 . On-Campus Living: Social Aspects
- On-Campus Living - To what degree are you: Hanging out with other residents
- On-Campus Living - To what degree are you: Making friends with others in the hall/building
- On-Campus Living - To what degree are you: Satisfied with the social activities in your hall/building

Factor 12 . On-Campus Living: Environment
- On-Campus Living - To what degree are you: Adjusting to living in on-campus housing
- On-Campus Living - To what degree are you: Able to study in your room/hall
- On-Campus Living - To what degree are you: Able to sleep in your room
- On-Campus Living - To what degree are you: Satisfied with your overall hall/building experience

Factor 13 . On-Campus Living: Roommate Relationship
- To what degree are roommate(s) or residents living with/near you: Respecting your study time
- To what degree are roommate(s) or residents living with/near you: Respecting your sleep time
- To what degree are roommate(s) or residents living with/near you: Respecting your privacy
- To what degree are roommate(s) or residents living with/near you: Respecting your property
- Overall, to what degree are you having problems with people living with/near you?

Factor 14 . Off-Campus Living: Environment
- Off-Campus Living Environment - To what degree are you: Able to study in your room/home
- Off-Campus Living Environment - To what degree are you: Able to sleep in your room/home
- Off-Campus Living Environment - To what degree are you: Satisfied with your overall living environment

Factor 15 . Homesickness: Separation
- Homesickness - To what degree do you: Miss your family back home
- Homesickness - To what degree do you: Miss your old friends who are not at this school

Factor 16 . Homesickness: Distressed
- Homesickness - To what degree do you: Feel upset because you want to go home
- Homesickness - To what degree do you: Regret leaving home to go to school
- Homesickness - To what degree do you: Think about going home all the time

Factor 17 . Academic Integration
- Academic Adjustment - Overall, to what degree are you: Keeping current with your academic work
- Academic Adjustment - Overall, to what degree are you: Motivated to complete your academic work
- Academic Adjustment - Overall, to what degree are you: Performing well in your classes
- Academic Adjustment - Overall, to what degree are you: Learning
- Academic Adjustment - Overall, to what degree are you: Satisfied with your academic life on campus

Factor 18 . Social Integration
- Sense of Belonging - Overall, to what degree: Do you belong here?
- Sense of Belonging - Overall, to what degree: Are you fitting in?
- Sense of Belonging - Overall, to what degree: Are you satisfied with your social life on campus?

Factor 19 . Satisfaction with Institution
- Overall Evaluation of the College/University - Overall, to what degree: Would you choose this college/university again if you had it to do over?
- Overall Evaluation of the College/University - Overall, to what degree: Would you recommend this college/university to someone who wants to attend college?
- Overall, please rate your experience at this college/university