

The General Education program is designed to help students achieve the following eleven goals¹:

“Goal 1: The ability to write and speak English clearly, logically, creatively, and effectively.”

“Goal 2: The ability to read and listen with understanding and comprehension.”

“Goal 3: The ability to locate, organize, document, present, and use information and ideas.”

“Goal 4: An understanding of the cultural heritages of the United States and knowledge of the language or literature of another country.”

“Goal 5: An understanding of the artistic processes and products.”

“Goal 6: An understanding of fundamental mathematical principles and the skills to apply them.”

“Goal 7: The ability to use computers for acquiring, processing, and analyzing information.”

“Goal 8: An understanding of the natural world and the ability to apply scientific principles to reach conclusions.”

“Goal 9: An understanding of the diverse influences which have shaped the development of civilization and which affect individual and collective human behavior.”

“Goal 10: An understanding of the governing structures and operations of the United States including rights and responsibilities of its citizens.”

“Goal 11: The ability to reason logically and think critically in order to improve problem-solving skills and the ability to make informed and responsible choices.”

¹ Approved by the Francis Marion General Faculty on December 5, 1995

GENERAL EDUCATION PROGRAM (GEP) EVALUATION for 2010-2011²

Survey Instruments and Methodology

National Survey of Student Engagement

The National Survey of Student Engagement (NSSE) developed and administered by the Indiana University Center for Postsecondary Research provides data indicating the extent to which students are involved in five areas of University experiences:

- Level of Academic Challenge
- Active and Collaborative Learning Experiences
- Enriching Educational Experiences
- Student-Faculty Interaction
- Supportive Campus Environment.

The level of involvement of Francis Marion students is also compared to the level of involvement of students at three sets of peer institutions. For the first three years the comparison groups were:

1. NSSE – all participating institutions
2. Carnegie - colleges in the NSSE sample which belonged to our major Carnegie groupings
3. Selected peers - twelve colleges from the southeast which were most comparable to our demographics and detailed Carnegie classification.

In 2008-09, the selected peer group was changed to include all NSSE-participant institutions that belonged to the Consortium for the Study of Writing in College (CSWC). For 2009-10 and 2010-11 subsets of the CSWC institutions were identified selected peer groups as follows: (a) '09-10, CSWC institutions in the south with enrollments of less than 10,000 and (b) '10-11, CSWC institutions which are comparable to Francis Marion on at least one other factor (e.g. size, selectivity, location).

The NSSE sample for 2010-11 included 194 freshmen and 198 seniors selected by a stratified-random sampling procedure from the roster of all freshmen (FY) and seniors (SR) enrolled at FMU. The return rate for freshmen was 18% and 33% for seniors. The return rates for our peer institutions ranged from 25 - 33%.

The survey data provide information which aid in the assessment of the General Education Program. Survey items measure either frequency of events, students' intentions to engage in certain activities, students' opinions/perception concerning university services and activities, *etc.* For all items, a higher score indicates a more positive response.

The reported data are the mean responses of FMU students and student in the three peer groups.

FMU Internal Measures of Achievement of General Education Goals

Ratings by Students

At each practice for commencement ceremonies, students complete the *Graduating Senior Exit Exam (GSEE)*. The General Education Goals are listed in one section of the exam, and students use a 7-point scale to indicate the extent to which they think they have achieved each of the respective goals. Seniors also use a 6-point scale to indicate their satisfaction with the GEP and instruction in the GEP. These data are presented in Tables 2 and 3.

Departmental Assessments

Departments also measure student achievement of general education goals (e.g., knowledge of discipline related to GEP goals; knowledge of the scientific method; quantitative skills; basic computer skills; and communication skills). Results are reported annually in departmental institutional effectiveness reports and are summarized throughout this report.

² Submitted to the Academic Affairs Committee on April 12, 2012

Results and Discussion

*Rating of Overall Satisfaction with General Education Program (GEP)**NSSE and Graduating Senior Exit Exam*

Results in table 1 and table 2 indicate that students (a) think they are acquiring a broad general education and (2) are satisfied with the GEP. FMU freshmen ratings on the NSSE did not differ from their peer groups (all p 's $>.05$). For three of the five years, FMU seniors have indicated a significantly higher impact than students at their peer institutions.

Table 1. Overall Evaluation of General Education Experience Reported on NSSE (5-point scale)

		FMU	Writing Emphasis ³			Carnegie Peers			NSSE Sample		
<i>Contributed to knowledge, skills, and personal development</i>	Year	Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES
<i>Acquiring a broad general education</i>											
<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>											
2007	FY	2.57	2.72			2.82			2.73		
	SR	3.06	3.05			3.10			3.02		
2008	FY	3.06	3.21			3.18			3.20		
	SR	3.54	3.30	*	.30	3.35	*	.25	3.29	**	.31
2009	FY	3.11	3.14			3.16			3.16		
	SR	3.55	3.23	**	.39	3.30	**	.32	3.25	**	.37
2010	FY	3.26	3.21			3.17			3.19		
	SR	3.45	3.30			3.33			3.27		
2011	FY	3.38	3.17			3.16			3.18		
	SR	3.39	3.19	.05	.25	3.24			3.24		

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

Seniors responding on a 6-point scale ranging from 1=very dissatisfied to 6=very satisfied (*Graduating Senior Exit Exam*) indicated a high level of satisfaction with the GEP. It is a reasonable assumption

Table 2. Graduating Seniors' Average Ratings of Satisfaction with the General Education Program

	Fall 2010			Spring 2011		
	Mean	SD	n	Mean	SD	n
General Education Program	5.07	.88	190	4.96	.94	235
General Education Instruction	5.11	.85	192	5.03	.87	241

that seniors' satisfaction reflects the increase in knowledge and abilities they have experienced during their collegiate years.

³ Beginning in 2009, the selected peer group was selected to be institutions which emphasized writing in their curricula. For 2010 and '11 it was further restricted to institutions which emphasize writing and are similar to FMU on at least one characteristic.

Assessment of Competency in Specific General Education Goals

Faculty and Student Ratings

Seniors report a moderately strong agreement that they have achieved the GE goals when using a 7-point scale, ranging from 1=strongly disagree to 4=neither agree nor disagree to 7=strongly agree (Table 3).

Table 3. Mean Ratings of General Education Goals by Graduating Seniors and Faculty

Goals	Graduating Seniors					
	Fall 2010			Spring 2011		
	Mean	SD	N	Mean	SD	N
Goal 1: The ability to write and speak English clearly, logically, creatively, and effectively.	6.12	1.08	189	6.07	1.11	242
Goal 2: The ability to read and listen with understanding and comprehension	6.10	1.02	189	5.99	1.11	241
Goal 3: The ability to locate, organize, document, present, and use information and ideas.	6.20	.98	188	6.13	1.06	239
Goal 4: An understanding of the cultural heritages of the United States and knowledge of the language and literature of another country	5.87	1.10	189	5.76	1.26	240
Goal 5: An understanding of the artistic processes and products	5.85	1.09	187	5.57	1.33	240
Goal 6: An understanding of the fundamental mathematical principles and the skills to apply them.	6.10	.97	187	5.88	1.32	240
Goal 7: The ability to use computers for acquiring, processing, & analyzing information.	6.21	.95	187	5.90	1.22	240
Goal 8: An understanding of the natural world and the ability to apply scientific principles to reach conclusions	6.07	.99	187	5.90	1.14	240
Goal 9: An understanding of the diverse influences which have shaped the development of civilization and which affect individual and collective human behavior	6.08	1.02	187	5.92	1.20	241
Goal 10: An understanding of the governing structures and operation of the United States including rights and responsibilities of its citizens	6.04	1.01	188	5.96	1.11	241
Goal 11: The ability to reason logically and think critically in order to improve problem-solving skills and the ability to	6.23	.95	188	6.05	1.10	241

Goals	Graduating Seniors					
	Fall 2010			Spring 2011		
	Mean	SD	N	Mean	SD	N
make informed and responsible choices						

Assessments for Specific GEP Goals Using NSSE and Departmental Institutional Effectiveness Reports

*Ability to Write and **Speak** English Clearly, Logically, Creatively, and Effectively (GEP Goal 1)*

Evaluations by the Department of Speech and Mass Communication indicate that a substantial number of students improve their speaking ability during the semester (see table 4). Five randomly-selected students in each Speech 101 class were evaluated on their first major speech of the semester using the *Competent Speaker* evaluation form designed by the National Communication Association. Students were given a 1 (unsatisfactory), a 2 (satisfactory), or a 3 (excellent) on each of eight categories on the evaluation form which allowed for a total score between 8 and 24. The same five students were reevaluated using the same form and guidelines during their presentations of a speech near the end of the semester. Their performances on each evaluation were then compared.

Table 4. Percent Change in Students' Performances on Speeches Given Early and Late in the Semester

Performance	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011
Improved	78.9%	60%	71%	65%	74.8%
Stayed the same	15.5%	20.7%	20%	19.9%	15.2%
Did worse	11.2%	15.7%	10.3%	15%	9.3%

The percentage of improvement during the 2010-'11 academic year increased 9.8% from the previous year. Fluctuation continues to be a problem from semester to semester and from year to year. Despite the inconsistency, a 5-year average indicates that 69.9% of FMU students are improving in their speaking efforts throughout the semester. This indicates that, while there is room for improvement, many students improve their speaking skills.

Table 5 indicates that freshmen and seniors think they have improved their speaking skills while at FMU. Their ratings are always as high, or higher (p 's < .001 to .05), than their peers.

Table 5. Ability to Write and Speak English Clearly, Logically, Creatively, and Effectively (GEP Goal 1)

NSSE Category		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following area:</i>	Year	Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES
	Speaking clearly and effectively	<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>									
2007	FY	2.69	2.77			2.88			2.76		
	SR	3.18	2.98			3.07			2.95	*	.26
2008	FY	2.81	2.86			2.92			2.85		
	SR	3.33	3.04	**	.32	3.12	*	.25	3.00	**	.36
2009	FY	2.94	2.85			2.94			2.84		

NSSE Category		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
2010	SR	3.34	2.96	***	.42	3.13	*	.25	2.99	**	.39
	FY	3.10	3.00			2.94			2.89		
	SR	3.10	3.11			3.12			3.02		
2011	FY	3.42	2.85	***	.62	2.92	**	.55	2.87	***	.60
	SR	3.15	2.97			3.07			3.01		

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

Ability to **Write** and **Speak English Clearly, Logically, Creatively, and Effectively** (GEP Goal 1)

Table 6 indicates that freshmen and seniors think they have improved their writing skills while at FMU. Their ratings are always as high, or higher (p 's $< .001$ to $.05$), than their peers.

Table 6. Ability to Write and Speak English Clearly, Logically, Creatively, and Effectively (GEP Goal 1)

NSSE Category		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following area:</i>	Year	Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES
	Writing clearly and effectively						<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>				
2007	FY	2.98	2.96			3.07			2.95		
	SR	3.29	3.07	*	.25	3.19			3.06	*	.27
2008	FY	3.07	3.04			3.07			3.02		
	SR	3.37	3.12	*	.29	3.22			3.11	*	.30
2009	FY	3.53	3.02	***	.59	3.07	***	.56	3.02	***	.59
	SR	3.55	3.08	***	.55	3.18	***	.45	3.11	***	.52
2010	FY	3.36	3.17			3.10	*	.31	3.04	**	.37
	SR	3.34	3.21			3.22			3.13		
2011	FY	3.45	3.02	**	.51	3.07	*	.46	3.03	**	.49
	SR	3.15	3.10			3.15			3.11		

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

Tables 7 and 8 indicate the extent to which students are required to complete assignments which would be expected to improve their writing skills. Freshmen are required to rewrite documents at a rate that is somewhat higher than students at peer institutions (all p 's $< .05$, $.01$ or $.001$). For 11 of the 18 comparisons (61%) in Table 7, FMU students were required to submit rewrites significantly more frequently than students at other institutions were required to submit them.

Table 7. Ability to Write and Speak English Clearly, Logically, Creatively, and Effectively (Goal 1)

	Year	FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
		Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES

	Year	FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
		Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES
<i>How often have you done the following? 1=Never, 2=Sometimes, 3=Often, 4=Very often</i>											
Prepared two or more drafts of a paper or assignment before turning it in											
2009	FY	3.21	2.71	***	.52	2.73	***	.51	2.69	***	.53
	SR	2.81	2.47	**	.34	2.58			2.49	**	.33
2010	FY	3.18	2.86	**	.34	2.75	***	.45	2.70	***	.49
	SR	2.69	2.68			2.56			2.51		
2011	FY	2.82	2.70			2.76			2.69		
	SR	2.79	2.49	*	.30	2.54	*	.25	2.49	*	.30

Table 8 suggests that no institutions require many 20-page papers, and FMU does not differ from the peer institutions as to the number required (all p 's > .05). For papers of 5-19 pages and papers with less than 5 pages, FMU students do not differ from their Writing-Emphasis peer group (all p 's > .05). When compared to their Carnegie and NSSE peers, FMU students have sometimes reported fewer multiple-page assignments (p 's < .05 or .01). Francis Marion, however, engage in activities which can help them to improve their writing skills at a level that is significantly higher than their peer students at institutions which emphasize writing (see Table 9).

Table 8. Ability to Write and Speak English Clearly, Logically, Creatively, and Effectively (Goal 1)

	Year	FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
		Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES
<i>During the current school year, how many written papers or reports of _____ have you completed? 1=None, 2=1-4, 3=5-10, 4=11-20, 5=More than 20</i>											
20 pages or more											
2009	FY	1.20	1.30			1.34			1.30		
	SR	1.68	1.63			1.67			1.65		
2010	FY	1.29	1.28			1.34			1.32		
	SR	1.57	1.63			1.70			1.65		
2011	FY	1.15	1.26			1.29			1.27		
	SR	1.58	1.62			1.68			1.62		
Between 5 and 19 pages											
2009	FY	2.18	2.35			2.30			2.28		
	SR	2.45	2.55			2.61			2.55		
2010	FY	2.24	2.22			2.35			2.27		
	SR	2.27	2.51			2.65	**	-.40	2.55	*	-.29
2011	FY	2.36	2.27			2.22			2.20		
	SR	2.62	2.53			2.59			2.54		
Fewer than 5 pages											
2009	FY	2.92	3.04			3.22	*	-.28	3.05		

	SR	2.82	3.01			3.09	*	-.23	3.00		
2010	FY	3.06	2.92			3.25		-.18	3.03		
	SR	2.77	2.90			3.09	*	-.27	3.00		
2011	FY	3.21	2.98			2.95			2.97		
	SR	2.87	2.96			3.07			2.99		

Table 9. Mean Number of Times when Students Have Engaged in Certain Activities in Preparation for a Writing Assignment

During the current school year, for how many of your writing assignments have you done each of the following?	Class	FMU	Writing Emphasis	Sig.	Effect Size
Talked with your instructor to develop your ideas before you started drafting your assignment	FY	3.43	2.98	*	.39
	SR	3.17	2.87	*	.27
Received feedback from your instructor about a draft before turning in your final assignment	FY	3.33	3.32		
	SR	3.27	2.90	*	.31
Visited a campus-based writing or tutoring center to get help with your writing assignment before turning it in	FY	1.96	2.07		
	SR	2.10	1.75	*	.31
Talked with a classmate, friend, or family member to develop your ideas before you started drafting your assignment	FY	3.66			
	SR	3.53	3.18	*	.31
Received feedback from a classmate, friend, or family member about a draft before turning in your final assignment	FY	3.54	3.30		
	SR	3.34	2.90	**	.37

Faculty in the FMU Writing Program evaluate performance by rating a subset of student papers (n=176) and portfolios (n=22) in English 111, 112, and 200 and judging it for competency in a particular area. Each paper was read three times, and only those items marked by at least two evaluators were counted in the results. In addition to the groups reading papers from English 111, 112, and 200, one group read “full portfolios” noting the areas in which the writer showed progress. The results of the analyses for four goals determined by the faculty in the English Department are shown in Tables 10-13. The percentage reaching

Table 10. The ability to use language conventions appropriately

Goal A. The ability to use language conventions appropriately (percentages indicate percentage of students deemed “competent” in this area)					
	2006	2007	2008	2009	2010
English 111	75%	89%	84%	61%	60%
English 112	95%	80%	91%	74%	60%
English 200	93%	90%	67%	65%	60%
Average	86%	86%	81%	67%	60%

Table 11. The ability to develop ideas interesting to the audience and appropriate to the context.

Goal B: The ability to develop ideas interesting to the audience and appropriate to the context (percentages indicate percentage of students deemed “competent” in this area)					
	2006	2007	2008	2009	2010
English 111	85%	64%	84%	82%	71%

English 112	75%	77%	75%	67%	70%
English 200	53%	85%	72%	65%	83%
Average	71%	75%	77%	71%	75%

Table 12. The ability to organize ideas for clarity and logic

Goal C. The ability to organize ideas for clarity and logic (percentages indicate percentage of students deemed “competent” in this area)					
	2006	2007	2008	2009	2010
English 111	75%	80%	87%	87%	71%
English 112	50%	80%	51%	58%	40%
English 200	35%	40%	39%	57%	43%
Average	53%	67%	59%	67%	51%

Table 13. The ability to use external resources appropriately

Goal D. The ability to use external sources appropriately (percentages indicate percentage of students deemed “competent” in this area)					
	2006	2007	2008	2009	2010
English 111	100%	42%	48%	30%	N/A
	24% N/A	58% N/A	52% N/A	77% N/A	
English 112	45%	49%	50%	36%	43%
	23% N/A	13% N/A	29% N/A	49% N/A	23% N/A
English 200	45%	80%	17%	57%	67%
Average	63%	57%	38%	41%	55%

* N/A or “not applicable” is applied to all papers where external sources were not required

competency varies greatly across years, but more than 50% of students accomplish the goals set for the general education writing classes. The results in Table 9 indicate that students continue to receive support for their writing efforts throughout their career at Francis Marion.

Ability to Read and Listen with Understanding and Comprehension (GEP Goal 2) & Ability to Locate, Organize, Document, Present, and Use Information and Ideas (GEP Goal 3)

Table 14 addresses Goal 2, the ability to read and listen with understanding and comprehension, and Goal 3, the ability to locate, organize, document, present, and use information and ideas. The frequencies indicate that FMU students are required to complete assignments that are considered to be critical to the development of these competencies. With one exception, FMU requirements are reported to be equal to, or greater than ($p < .05$ or $.01$), the requirements of their peer institutions. FMU freshmen report that they are required to argue a position using evidence and reasoning (mean frequency=3.69) more than students at other institutions which emphasize writing (mean=3.22) $p < .05$, $ES=.40$.

Table 14. Ability to Read and Listen with Understanding and Comprehension (GEP Goal 2) and Ability to Locate, Organize, Document, Present, and Use Information and Ideas (GEP Goal 3)

		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>Frequency of:</i>	Year	Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES
Working on a paper that required integrating ideas or information from various sources											
<i>1=Never, 2=Sometimes, 3=Often, 4=Very often</i>											
2007	FY	3.18	3.03			3.12			3.03		
	SR	3.49	3.29	*	.27	3.40			3.29	*	.27
2008	FY	3.38	3.09	*	.37	3.12	*	.34	3.06	**	.41

		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>Frequency of:</i>	Year	Mean	Mean	Sig.	ES	Mean	Sig.	ES	Mean	Sig.	ES
	SR	3.53	3.28	**	.33	3.39			3.30	**	.31
2009	FY	3.41	3.13	*	.35	3.14	*	.35	3.10	**	.39
	SR	3.48	3.32	*	.21	3.40			3.33	*	.20
2010	FY	3.45	3.20	*	.32	3.18	*	.36	3.11	**	.42
	SR	3.24	3.37			3.42			3.35		
2011	FY	3.20	3.10			3.11			3.10		
	SR	3.44	3.29			3.40			3.34		
<i>Frequency of:</i>											
Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships <i>1=Never, 2=Sometimes, 3=Often, 4=Very often</i>											
2007	FY	2.60	2.82			2.89			2.85		
	SR	3.06	3.02			3.09			3.03		
2008	FY	3.04	2.87			2.87			2.89		
	SR	3.26	3.04	*	.27	3.10			3.05	*	.25
2009	FY	2.95	2.93			2.90			2.93		
	SR	3.17	3.07			3.09			3.08		
2010	FY	2.92	2.94			2.97			2.94		
	SR	2.92	3.13			3.17	*	-.31	3.10		
2011	FY	3.00	2.89			2.90			2.95		
	SR	3.23	3.03			3.14			3.11		

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

An Understanding of the Cultural Heritages of the United States and Knowledge of the Language and Literature of another Country (Goal 4)

Table 15 indicates that FMU students do not consistently study foreign languages or plan to travel abroad at levels comparable to students at peer institutions.

Table 15. An Understanding of the Cultural Heritages of the United States and Knowledge of the Language and Literature of another Country (GEP Goal 4)

		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>Plan to: (Yes/No items)</i>		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
Study a foreign language											
2007	FY	.09	.20	*	-.28	.20	*	-.27	.22	**	-.31

		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>Plan to: (Yes/No items)</i>		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
	SR	.35	.42			.36			.41		
2008	FY	.08	.19	*	-.28	.19	*	-.27	.22	**	-.33
	SR	.35	.42			.39			.41		
2009	FY	.12	.23	*	-.26	.19		-.18	.22	*	-.24
	SR	.35	.42			.36			.41		
2010	FY	.12	.12			.20			.21		
	SR	.36	.34			.43			.41		
2011	FY	.12	.17			.17			.20		
	SR	.25	.36			.40	*	-.30	.40	**	-.30
Study abroad											
2007	FY	.04	.03			.04			.03		
	SR	.05	.12	**	-.23	.15	***	-.29	.14	***	-.28
2008	FY	.08	.03			.05			.03		
	SR	.07	.13			.14	*	-.19	.15	*	-.21
2009	FY	.03	.03			.03			.03		
	SR	.06	.14	**	-.24	.16	***	-.27	.15	**	-.26
2010	FY	.00	.04	***	-.22	.03	***	-.18	.03	***	-.18
	SR	.03	.11	**	-.27	.18	***	-.40	.14	***	-.33
2011	FY	.00	.03			.04	***	-.19	.03	***	-.18
	SR	.04	.09			.14	***	-.29	.15	***	-.29

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

An Understanding of Artistic Processes and Products (Goal 5)

Table 16 indicates that the likelihood that freshmen will attend an artistic performance has increased since 2006. All students attend these functions at a rate comparable to their peer groups. Data collected by the Fine Arts-Theater program suggests that the Theater Appreciation course is influential in increasing

Table 16. An Understanding of Artistic Processes and Products (GEP Goal 5)

		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>Frequency of:</i>		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
Attending an art exhibit, gallery, play, dance, or other theatre performance											
<i>1=Never, 2=Sometimes, 3=Often, 4=Very often</i>											
2007	FY	2.34	2.18			2.27			2.19		
	SR	2.01	2.00			2.06			2.07		
2008	FY	2.26	2.22			2.27			2.22		

		FMU	Writing Emphasis			Carnegie Peers			NSSE Sample		
<i>Frequency of:</i>		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
	SR	2.09	2.02			2.09			2.07		
2009	FY	2.40	2.14	*	.29	2.28			2.18		
	SR	1.97	2.01			2.08			2.05		
2010	FY	2.26	2.27			2.31			2.17		
	SR	1.93	1.97			2.11			2.03		
2011	FY	2.11	2.01			2.21			2.13		
	SR	1.85	1.91			2.06			2.01		

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

the likelihood that students will attend theatrical productions. When surveyed in 2010 and 2011 as to the extent to which their Theater Appreciation class had made them more likely to see a theatre production on campus 70.3% and 28%, respectively, indicated the choice of more likely. If they had to pay to see a theatre production off campus 42.1% and 32%, respectively, reported that they would be more likely.

Survey results in Table 17 provide some indication that students increased their understanding of the artistic processes of the theater. The variability in responses may reflect the fact that only one class was surveyed in 2011.

Table 17. Percentage of Students Responding to Options on a Theater Appreciation Class Survey for 2010 and 2011, respectively

• I feel I understand the theatrical process _____ I did before taking this course.		
much better than =82.5% 48.0%	about the same =15.7% 48%	much less than =1.8% 4.0%
• I feel it will be ___ to enjoy the experience of watching a play now that I've taken this course.		
easier =82.5% 72%	neither easier nor more difficult=15.7% 28%	more difficult =1.8% 0%
• I feel I have a(n) _____ understanding of the theatrical process as a result of this course.		
above average = 29.8% 20.0%	basic = 68.4% 72.0%	less than basic = 1.8% 8.0%
• I feel I am _____ of reading a play for its production possibilities as a result of this course.		
more capable=63.1% 48.0%	just as capable as before this course = 33.3% 40.0%	less capable=3.6% 12.0%

An Understanding of Fundamental Mathematical Principles and the Skills to Apply Them (Goal 6)

Students report that they have developed analytical skills at a level comparable to, or better than (p 's < .05 or .001), than students at peer institutions (see table 18). The Department of Mathematics uses several

Table 18. An Understanding of Fundamental Mathematical Principles and the Skills to Apply Them (Goal 6)

		FMU	Writing Emphasis				Carnegie Peers			NSSE Sample		
<i>Contributed to knowledge, skills, and personal development:</i>		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES	
Thinking critically and analytically												
<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>												
2007	FY	3.09	3.16			3.22			3.17			
	SR	3.40	3.34			3.38			3.33			
2008	FY	3.13	3.21			3.20			3.21			
	SR	3.51	3.36			3.40			3.36			
2009	FY	3.53	3.02	***	.59	3.07	***	.56	3.02	***	.59	
	SR	3.55	3.08	***	.55	3.18	***	.45	3.11	***	.52	
2010	FY	3.35	3.33			3.25			3.25			
	SR	3.45	3.42			3.42			3.38			
2011	FY	3.71	3.19	***	.68	3.22	***	.64	3.25	***	.59	
	SR	3.55	3.30	**	.33	3.37			3.37			
Analyzing quantitative problems												
<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>												
2007	FY	3.09	3.16			3.22			3.17			
	SR	3.40	3.34			3.38			3.33			
2008	FY	3.13	3.21			3.20			3.21			
	SR	3.51	3.36			3.40			3.36			
2009	FY	3.43	3.20	*	.30	3.23			3.22			
	SR	3.63	3.33	***	.40	3.40	**	.32	3.36	***	.36	
2010	FY	3.10	3.05			2.96			2.99			
	SR	3.13	3.17			3.09			3.11			
2011	FY	3.35	2.97	*	.45	2.97	*	.45	3.00	*	.40	
	SR	3.37	3.03	*	.40	3.06	*	.35	3.11	*	.30	

* $p < .05$

** $p < .01$

*** $p < .001$ ES = Effect Size

assessment tools, such as an internal assessment exam, an internal portfolio analysis, the University student and course evaluations, and the external Praxis I (PPST Mathematics) exam for educators (see Table 19). The ratings on the *FMU Faculty Evaluation* is in agreement with the NSSE data which indicates that students feel they have developed quantitative skills. The mean scores indicate that a majority of our students learn fundamental quantitative skills from the introductory mathematics courses.

Table 19. Mean Values Obtained with Assessment Tools Used by the Department of Mathematics				
Assessment	2007-08	2008-09	2009-10	2010-11
Overall quality of Math 111 course as a learning experience ¹ (Faculty Evaluation)	1.89	1.81	1.95	1.82
Overall quality of Math 120 course as a learning experience ¹ (Faculty Evaluation)	1.78	1.78	2.02	Math 120 deleted
Overall quality of Math 121 course as a learning experience ¹ (Faculty Evaluation)	2.36	1.97	1.96	2.38
Overall quality of Math 170 course as a learning experience ¹ (Faculty Evaluation)	1.93	2.70	2.72	2.32
Overall quality of Math 270 course as a learning experience ¹ (Faculty Evaluation)	1.37	1.82	1.90	1.41
Mean assessment score out of 100 points of students who received an A, B, or C in Math 111	73.2	70.0	78.2	57.7
Assessment of Math 120 Portfolios (out of 60 points)	45.9	43.1	42.1	Math 120 deleted
Assessment of Math 121 Portfolios (60 points)	47.2	41.3	43.6	40.07
Percentages of elementary and early childhood education majors who passed Praxis I Math given completion of Math 170/270/370 sequence and who passed Praxis I Math given non-completion of Math 170/270/370 sequence	80.6 Vs. 68.0 Difference = 12.6	72.7 Vs. 59.4 Difference = 13.3	82.4 Vs. 69.4 Difference = 13.0	90.9 Vs. 67.4 Difference = 23.5

1. Data as recorded on University Course and Instructor Evaluations (1-excellent, 2-good, 3-fair, 4-poor, 5-cannot rate).

Ability to Use Computers for Acquiring, Processing, and Analyzing Information (Goal 7)

Despite some positive and negative variability (all p 's < .05 - .001), FMU students are required to use technology at about the same extent as students at other institutions (table 20).

Table 20. Ability to Use Computers for Acquiring, Processing, and Analyzing Information (Goal 7)

<i>Frequency of:</i>		FMU	Selected Peers		Carnegie Peers			NSSE Sample			
		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
Using computing and information technology <i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>											
2007	FY	3.08	3.07			3.04			3.01		
	SR	3.38	3.27			3.18			3.20		
2008	FY	3.09	3.11			3.02			3.04		
	SR	3.42	3.29			3.24			3.22	*	.24
2009	FY	3.09	3.03			3.02			3.05		
	SR	3.52	3.18	**	.39	3.20	**	.38	3.21	***	.36
2010	FY	3.22	3.12			2.98			3.05		
	SR	3.31	3.29			3.15			3.22		
2011	FY	3.23	3.02			3.04			3.05		
	SR	3.34	3.14			3.23			3.20		

Used an electronic medium (listserv, chat group, Internet, instant messaging, etc.) to discuss or complete an assignment <i>1=Never, 2=Sometimes, 3=Often, 4=Very often</i>											
2007	FY	2.59	2.64			2.59			2.61		
	SR	2.75	2.87			2.85			2.83		
2008	FY	2.64	2.66			2.55			2.59		
	SR	2.89	2.89			2.82			2.82		
2009	FY	2.69	2.65			2.57			2.64		
	SR	2.98	2.87			2.79			2.87		
2010	FY	2.66	2.66			2.60			2.64		
	SR	2.55	2.89	*	-.34	2.85	*	-.30	2.88	*	-.33
2011	FY	2.64	2.63			2.60			2.67		
	SR	3.03	2.85			2.94			2.90		

* $p < .05$

** $p < .01$

*** $p < .001$ ES = Effect Size

Using computers in academic work <i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>											
2007	FY	2.59	2.64			2.59			2.61		
	SR	2.75	2.87			2.85			2.83		

2008	FY	2.64	2.66			2.55			2.59		
	SR	2.89	2.89			2.82			2.82		
2009	FY	2.69	2.65			2.57			2.64		
	SR	2.98	2.87			2.79			2.87		
2010	FY	3.40	3.36			3.27			3.33		
	SR	3.43	3.46			3.40			3.47		
2011	FY	3.38	3.29			3.29			3.33		
	SR	3.61	3.39			3.47			3.45		

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

An Understanding of the Natural World and the Ability to Apply Scientific Principles to Reach Conclusions (Goal 8)

In general, students report that their course work has required them to engage in activities that are necessary in order to reach mechanistic explanations (Table 21). In three instances, they reported less emphasis than students at the peer institutions reported (all p 's $< .05$). In one instance they reported more ($p < .05$).

Table 21. An Understanding of the Natural World and the Ability to Apply Scientific Principles to Reach Conclusions (Goal 8)

		FMU	Writing Emphasis		Carnegie Peers			NSSE Sample			
<i>How much has coursework emphasized:</i>		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components											
<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>											
2007	FY	2.82	3.04			3.08	*	-.34	3.07	*	-.08
	SR	3.17	3.22			3.24			3.23		
2008	FY	3.11	3.09			3.06			3.10		
	SR	3.34	3.24			3.27			3.24		
2009	FY	3.27	3.14			3.11			3.14		
	SR	3.42	3.26			3.26			3.28		
2010	FY	3.16	3.14			3.15			3.15		
	SR	3.14	3.30			3.33	*	-.26	3.29		
2011	FY	3.26	3.14			3.12			3.17		
	SR	3.46	3.26	*	.27	3.30					

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

The Psychology Department gives a quiz to all students taking the Introductory Psychology Lab. Table 22 indicates that between 35 to 80 percent of the students leave the course with an ability to engage in scientific thinking.

Table 22. Median Percentage of Students Who Successfully Complete Items in Areas of Scientific Thinking

Area of Scientific Thinking	Median Correct		Benchmark
	2009-2010	2010-2011	
a. Nature of science and scientific goals (6 items, $\alpha = .115$)	44	50	40
b. Methods in scientific research (6 items, $\alpha = .237$)	43	67	40
c. Critical analysis of results and hypotheses (9 items, $\alpha = .529$)	42	67	50
d. Validity of conclusions drawn from findings (4 items, $\alpha = .202$)	70	50	50
Overall $\alpha = .622$	(N = 214)	(N=181)	

The Department of Physics and Astronomy has students complete a survey concerning the results of an experiment they have just designed and completed. The students' abilities to carry out experimental design, data acquisition, and analysis are reflected in their answers to the questions. In 55% of the instances, more than 80% of the students choose answers that are either correct or reasonable (Table 23).

Table 23. Number and Percent of Students Who Chose One of the Three Responses

<i>Question #/Response characterizations</i>	2006-2007 (149 students)	2007-2008 (242 students)	2008-2009 (205 students)	2009-2010 (210 students)	2010-2011 (250 students)
1. Correct	77 (52%)	97 (40%)	92 (45%)	96 (45%)	72 (29%)
Incorrect/reasonable	69 (46%)	126 (52%)	99 (48%)	103 (48%)	133 (53%)
Incorrect	3 (2%)	19 (8%)	14 (7%)	37 (7%)	45 (18%)
2. Correct	120 (81%)	203 (84%)	144 (70%)	149 (70%)	157 (63%)
Incorrect/reasonable	26 (17%)	39 (16%)	43 (21%)	44 (21%)	53 (21%)
Incorrect	3 (2%)	0 (0%)	18 (9%)	8 (9%)	15 (6%)
3. Correct	96 (64%)	109 (45%)	89 (43%)	91 (43%)	103 (41%)
Incorrect/reasonable	47 (32%)	116 (48%)	79 (39%)	82 (38%)	120 (48%)
Incorrect	6 (4%)	17 (7%)	36 (18%)	37 (17%)	27 (11%)
4. Correct	65 (44%)	83 (34%)	9 (4%)	9 (4%)	25 (10%)
Incorrect/reasonable	26 (17%)	142 (59%)	137 (67%)	143 (67%)	120 (48%)
Incorrect	57 (38%)	17 (7%)	57 (28%)	16 (8%)	90 (36%)

The Department of Biology administers a course-specific cumulative quiz at the end of the semester in the laboratory sections of each of Biology 103, 104, 105, and 106. The quizzes were multiple-choice in format and designed to test the student's knowledge of biology and their ability to interpret data and reach conclusions. The average quiz score of the combined sections of each course and simple statistical parameters of the quiz results were calculated and tabulated by Academic Computer Services. Results for three courses are in Table 24.

Table 24. Scores on Biology Quizzes which Measured Discipline-Specific and Scientific Knowledge

	2010		2011		Benchmark
	Mean Score	S.D.	Mean Score	S.D.	
BIO 103	62.8	2.07	62.2	1.82	60
BIO 105	58.9	2.57	59.1	2.7	60
BIO 106	71.9	2.25	67.4	1.9	60

The assessment procedure for the General Education Chemistry classes is a quiz used to determine knowledge of the six core aspects of chemistry based on a recently completed laboratory experiment. For three of the six concepts, more than 60% of the students scored correctly.

An Understanding of the Diverse Influences which Have Shaped the Development of Civilization and which Affect Individual and Collective Human Behavior (GEP Goal 9)

In Table 25, students report that they have developed the ability to understand people of other racial and ethnic backgrounds. They also report a high level of opportunities to engage in activities which can increase their knowledge and awareness.

Table 25. An understanding of the diverse influences which have shaped the development of civilization and which affect individual and collective human behavior (GEP Goal 9)

<i>Contributed to knowledge, skills, and personal development:</i>		FMU	Selected Peers			Carnegie Peers			NSSE Sample		
		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
Understanding people of other racial and ethnic backgrounds <i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>											
2007	FY	2.56	2.60			2.66			2.61		
	SR	2.77	2.59			2.64			2.59		
2008	FY	2.54	2.70			2.69			2.67		
	SR	2.73	2.67			2.75			2.64		
2009	FY	2.65	2.73			2.73			2.71		
	SR	3.18	2.68	***	.51	2.72	***	.47	2.66	***	.52
2010	FY	2.72	2.71			2.75			2.70		
	SR	2.70	2.74			2.73			2.69		
2011	FY	2.81	2.60			2.74			2.69		
	SR	2.83	2.59			2.70			2.67		
<i>Frequency of:</i>											

<i>Contributed to knowledge, skills, and personal development:</i>	FMU	Selected Peers			Carnegie Peers			NSSE Sample			
	Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES	
Understanding people of other racial and ethnic backgrounds <i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>											
Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments <i>1=Never, 2=Sometimes, 3=Often, 4=Very often</i>											
2007	FY	2.82	2.76			2.83			2.76		
	SR	2.83	2.79			2.97			2.80		
2008	FY	2.88	2.81			2.82			2.78		
	SR	3.02	2.81			2.95			2.81		
2009	FY	3.09	2.82	*	.31	2.82	*	.32	2.80	*	.33
	SR	3.19	2.85	***	.37	2.92	**	.30	2.83	***	.39
2010	FY	3.02	2.85			2.86			2.80		
	SR	2.88	2.95			2.96			2.85		
2011	FY	2.76	2.72			2.78			2.79		
	SR	2.93	2.80			2.93			2.83		

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

An Understanding of the Governing Structures and Operations of the United States including Rights and Responsibilities of Its Citizens (GEP Goal 10)

On 43% of the comparisons in Table 26, students reported that experiences at FMU had a greater impact on their voting than students reported at the peer institutions (all p 's $< .05 - .001$).

Table 26. An understanding of the governing structures and operations of the United States including rights and responsibilities of its citizens (Goal 10)

<i>Contributed to knowledge, skills, and personal development:</i>		FMU	Selected Peers			Carnegie Peers			NSSE Sample		
		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
Voting in local, state, or national elections <i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>											
2007	FY	2.09	2.08			2.03			2.05		
	SR	2.35	2.06	*	.28	2.08			2.06	*	.29
2008	FY	2.25	2.37			2.19			2.24		
	SR	2.46	2.17	*	.27	2.12	**	.32	2.11	**	.33
2009	FY	2.59	2.59			2.55			2.57		
	SR	2.79	2.34	***	.41	2.39	**	.37	2.33	***	.42
2010	FY	2.06	1.93			1.98			1.94		
	SR	2.30	2.18			2.19			2.12		
2011	FY	2.39	1.94	*	.45				2.00	*	.38
	SR	2.40	2.03	**	.36	2.12	*	.26	2.09	*	.29

* $p < .05$ ** $p < .01$ *** $p < .001$ ES = Effect Size

Ability to Reason Logically and Think Critically in Order to Improve Problem-solving Skills and the Ability to Make Informed and Responsible Choices (GEP Goal 11)

Students report that FMU has contributed to their reasoning and problem-solving abilities at a level that is comparable to or higher than students at the peer institutions (all p 's < .05 - .001) (table 27).

Table 27. Ability to Reason Logically and Think Critically in Order to Improve Problem-solving Skills and the Ability to Make Informed and Responsible Choices (GEP Goal 11)

<i>Contributed to knowledge, skills, and personal development:</i>		FMU	Selected Peers			Carnegie Peers			NSSE Sample		
		Mean	Mean	Sig	ES	Mean	Sig	ES	Mean	Sig	ES
<i>Thinking critically and analytically</i>		<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>									
2007	FY	3.09	3.16			3.22			3.17		
	SR	3.40	3.34			3.38			3.33		
2008	FY	3.13	3.21			3.20			3.21		
	SR	3.51	3.36			3.40			3.36		
2009	FY	3.43	3.20	*	.30	3.23			3.22		
	SR	3.63	3.33	***	.40	3.40	**	.32	3.36	***	.36
2010	FY	3.35	3.33			3.25			3.25		
	SR	3.63	3.33	***	.40	3.40	**	.32	3.36	***	.36
2011	FY	3.71	3.19	***	.68	3.22	*	.64	3.25	***	.59
	SR	3.55	3.30	**	.33	3.37			3.37		
<i>How much has coursework emphasized:</i>											
<i>Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components</i>		<i>1=Very little, 2=Some, 3=Quite a bit, 4=Very much</i>									
2007	FY	2.82	3.04			3.08			3.07		
	SR	3.17	3.22			3.24			3.23		
2008	FY	3.11	3.09			3.06			3.10		
	SR	3.34	3.24			3.27			3.24		
2009	FY	3.27	3.14			3.11			3.14		
	SR	3.42	3.26			3.26			3.28		
2010	FY	3.16	3.14			3.15			3.15		
	SR	3.14	3.30			3.33			3.29		
2011	FY	3.26	3.14			3.12			3.17		
	SR	3.46	3.26	*	.27	3.30			3.31		