

Analysis of Academic Questions from NSSE 2004-2012

Prepared by
Dr. Christopher Cratsley
Director of Assessment

Executive Summary

The National Survey of Student Engagement (NSSE) is an 85 item instrument administered on campuses throughout the United States to evaluate student engagement with various elements of their higher education experience. Fitchburg State University has administered NSSE in 2004, 2006, 2009 and 2012. Results over these years have been supplied by NSSE along with statistical analyses comparing Fitchburg State student responses to mean student responses from 3 different groups of campuses: New England Public, National Public Masters, and the total pool of NSSE results. The following report was initially prepared for the 2014-2015 Liberal Arts and Sciences (LA&S) program review, using items from the survey selected by Dr. Eric Budd as pertaining to the LA&S curriculum. Additional items were added to the analysis by the author to provide further information as well as to furnish data to the Academic Planning Group. No comparisons to the overall national NSSE data were included in this analysis in an attempt to compare Fitchburg State data only to data from the most similar institutions.

This analysis includes 3 types of information: student estimates of time and emphasis in a given year on certain intellectual and mental activities, student self-evaluation of their growth in related learning outcomes over the course of their time at Fitchburg State, and student estimates of the time spent engaged in and completion of specific types of course or curricular strategies in a given year or over the course of their academic career:

Emphasis on Intellectual and mental activities: Fitchburg State University students are very rarely challenged to examine the strengths and weaknesses of their own views or to try to imagine an issue from someone else's perspective relative to students at other institutions, and there is some evidence that the curriculum could be modified to more often require them to include diverse perspectives in their class discussions and writing assignments. In addition, while students at Fitchburg State are often asked to work on a paper or project that requires integrating ideas or information from various sources, as seniors they do not appear to be asked to do so as frequently as students from other institutions.

Growth in Learning Outcomes: Fitchburg State University students report the lowest contribution of the institution to their understanding of people from other racial and ethnic backgrounds and their personal code of values and ethics. While students from most institutions report low institutional contributions to these areas, Fitchburg State freshman consistently report lower contribution of the institution to their understanding of people from diverse backgrounds than do their peers at other schools.

Course and Curricular Strategies: Both freshmen and seniors at Fitchburg State reported relatively infrequent experience with preparing multiple drafts of a paper or assignment, relative to students at other institutions. Freshmen also infrequently gave class presentations and were rarely involved in learning communities. There were also very few students involved in community based projects, and Fitchburg State students participated in community service less frequently than their peers. Students at other institutions are much more likely to engage in foreign language coursework, although in recent surveys Fitchburg State has closed the gap in terms of study abroad experience. Finally, one hallmark of a Fitchburg State education appears to be that students are more likely to engage in an internship, practicum, clinical assignment or other field-based experience than students at other institutions.

Detailed Analysis of Academic Questions from NSSE 2004-2012

Data in each table provided represents the % of students selecting the top two options on the survey for Fitchburg State in each year and for comparison the 2012 results for New England Public institutions and Public Masters institutions nationwide. Percentages in **bold and underlined** represent instances in which mean scores for Fitchburg State student responses fell significantly below mean scores for peer institutions in a given year. The “-“ symbol(s) following the data for one of our 2012 comparison groups represent the significance level for the extent to which the mean score for Fitchburg State students in 2012 fell significantly below the mean score for that comparison group (- represents $p < 0.05$, -- represents $p < 0.01$, --- represents $p < 0.001$).

Course Assignments and Discussions: Integrating Diverse Sources, Perspectives and Coursework

While freshman survey responses showed an overall increase across all 4 years sampled, Fitchburg State freshmen in 2012 did not report as high levels of integrating ideas or information from various sources or including diverse perspectives in their assignments as they had in 2006 and 2009 (Table 1). They reported including diverse perspectives at a significantly lower rate than their peers at comparable institutions in 2012. However, they were on par with student reports for peer institutions in 2012 for integrating ideas or information from various sources and putting together concepts from different courses. Overall reported frequencies were highest (>66% often/very often) for integrating ideas or information from various sources, relative to including diverse perspectives (<62%) or putting together ideas or concepts from different courses (<54%).

Seniors from Fitchburg State reported higher levels of each of these activities than freshman and the levels were comparable to what had been reported in prior years of the survey. However, for each activity Fitchburg State students reported engaging in the activity with significantly less frequency than their peers at other institutions in 2012. While this level of work had been on par with peer institutions in prior years for including diverse perspectives and putting together ideas from different courses, peer institutions showed higher scores in these areas in 2012. On the other hand, in every year studied, our seniors reported significantly lower levels of working on a paper or project that integrated ideas from various sources than did their peers at other institutions. This suggests potential room for increases in the frequency of including diverse perspectives in class discussions or writing assignments at both introductory and advanced levels in our curriculum as well as the potential for increases in the frequency of requiring integrating ideas or information from various sources and putting together ideas or concepts from different courses in advanced coursework.

Table 1: In your experience at your institution during the current school year, about how often have you done each of the following? 1 = never, 2 = sometimes, 3 = often, 4 = very often

	Year	2004 % 3/4	2006 % 3/4	2009 % 3/4	2012 % 3/4	2012 NE Public	2012 Masters
Worked on a paper or project that required integrating ideas or information from various sources.	Fr	<u>66%</u>	81%	85%	75%	78%	79%
	Sr	<u>80%</u>	<u>79%</u>	<u>85%</u>	<u>84%</u>	88%---	87%--
Included diverse perspectives (different races, religions, genders, political beliefs, etc.) in class discussions or writing assignments	Fr	<u>41%</u>	62%	61%	<u>50%</u>	55% --	60% ---
	Sr	63%	56%	62%	<u>60%</u>	63% -	64% -
Put together ideas or concepts from different courses when completing assignments or during class discussions	Fr	44%	52%	54%	54%	55%	55%
	Sr	56%	67%	70%	<u>67%</u>	70%-	71%-

Course Emphasis on Mental Activities: Analysis, Synthesis, Judgment and Application

Examining freshman coursework for the mental activities emphasized, there was a fair amount of fluctuation in the scores for analyzing the basic elements of an idea, making judgments about information, arguments or methods, and applying theories of concepts to a new situation (Table 2). In each case Fitchburg State scores fell significantly below peer scores in only one year, 2009. In contrast freshman reported increasing levels of synthesizing and organizing ideas and information or experiences in each successive survey from 2004-2012 and never reported lower levels of emphasis in this mental activity relative to their peers from other institutions. Nonetheless, synthesizing and organizing ideas and information was consistently reported at among the lowest levels (<68%)

Seniors almost always reported higher levels of emphasis for these mental activities in their coursework with notable exceptions in 2004 for both making judgments about the value of information, arguments or methods and applying theories or concepts to practical problems, both of which were reported at lower levels by seniors than freshman for coursework in 2004. The level of emphasis on making judgments about the value of information, arguments or methods was similar for freshman and senior coursework in 2006 with 63% of responses scored as quite a bit or very much. In spite of steady increases from 2004 – 2012 in the percentages of seniors indicating this mental activity was emphasized quite a bit or very much, these levels were significantly lower than at least one peer group in both 2004 and 2012. No similar pattern of increase was observed in the level of emphasis on analyzing the basic elements of an idea, experience or theory, but the level of emphasis reported at Fitchburg State for senior coursework was also significantly lower than peer institutions in both 2004 and 2012. Fitchburg State seniors also reported significantly less emphasis on the least emphasized area, synthesizing and organizing ideas, information or experiences in 2012. These findings suggest the potential for improvement in the emphasis during advanced coursework on analyzing the basic elements of an idea, experience or theory, synthesizing and organizing ideas, information and experiences, and making judgments about the value of information, arguments or methods.

Table 2: During the current school year, how much has your coursework emphasized the following mental activities? 1 = very little, 2 = some, 3 = quite a bit, 4 = very much

	Year	2004 % 3/4	2006 % 3/4	2009 % 3/4	2012 % 3/4	2012 NE Public	2012 Masters
Analyzing the basic elements of an idea, experience, or theory, such as examining a particular case or situation in depth and considering its components.	Fr	75%	69%	73%	79%	79%	79%
	Sr	82%	74%	80%	83%	86%--	85%-
Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships	Fr	52%	58%	60%	68%	65%	68%
	Sr	69%	68%	75%	71%	79% --	77% -
Making judgments about the value of information, arguments or methods, such as examining how others gathered and interpreted data and assessing the soundness of their conclusions.	Fr	67%	63%	63%	67%	65%	70%
	Sr	59%	63%	69%	73%	77%-	76%
Applying theories or concepts to practical problems or in new situations	Fr	81%	65%	71%	70%	72%	74%
	Sr	75%	73%	81%	82%	82%	81%

Course (or non-course) frequency of intellectual activities: Reflection, Consideration and Revision

There was little variation in the Fitchburg State freshman student reported levels of frequency for any of the mental activities from 2006-2012 (Table 3). Examining the strengths and weaknesses of your own views was reported occurring at the lowest frequency (<41% often or very often). However trying to understand someone else’s views (<54%) and learning something that changed your understanding (56%) also occurred with relatively low frequencies. Freshmen reported significantly lower frequencies of examining the strengths and weaknesses of their own views on a topic or issue and trying to better understand someone else’s views relative to students from other institutions in all three years surveyed. They also reported significantly lower frequencies of learning something that changed the way they understand an issue or concept in 2006 and 2012.

Senior Fitchburg State students consistently reported higher frequencies of engaging in each mental activity. Fitchburg State seniors only reported lower frequencies of learning something that changed the way they understand an issue in 2012 relative to their peers. However, Fitchburg State seniors reported significantly lower levels of examining the strengths and weaknesses of their own views and trying to better understand someone else’s views in both 2006 and 2012, reporting very similar frequencies each year. If the relatively higher reported frequencies of these two mental activities in 2009 represent an aberration, then there is not only room for improvement in structuring coursework to encourage examining one’s own views and trying to understand the views of others for freshmen courses, but also similar room for improvement in our advanced coursework.

Table 3: During the current school year, about how often have you done each of the following?
1=Never, 2=Sometimes, 3=Often, 4=Very often (This question did not exist in 2004)

	Year	2004 % 3/4	2006 % 3/4	2009 % 3/4	2012 % 3/4	2012 NE Public	2012 Masters
Examined the strengths and weaknesses of your own views on a topic or issue.	Fr	NA	41%	41%	40%	45%-	52%---
	Sr	NA	47%	61%	48%	60%---	58%--
Tried to better understand someone else's views by imagining how an issue looks from his or her perspective	Fr	NA	54%	51%	51%	57%	62% ---
	Sr	NA	56%	66%	57%	68% --	66% --
Learned something that changed the way you understand an issue or concept.	Fr	NA	55%	56%	56%	60%	63%--
	Sr	NA	65%	68%	62%	67%-	68%-

Growth in Knowledge, Skills and Personal Development: Learning Outcomes

Freshmen perceptions of the contributions of a Fitchburg State University education to their knowledge, skills and personal development were comparable to perceptions of students at other institutions for most learning outcomes and generally showed a pattern of improved perceptions from 2004 to 2009 (Table 4). However, students reported the lowest levels of contribution made by their experiences at Fitchburg State University to understanding people of other racial and ethnic backgrounds, and these levels were significantly lower than their peers at comparable institutions in 2006, 2009, and 2012. Freshmen also reported relatively low levels (<60% quite a bit/very much) of contribution to their skills in solving complex real-world problems and developing a personal code of values and ethics, but these levels only deviated significantly below reports from their peers in 2006.

Seniors generally reported higher levels of contribution from the institution to these learning outcomes. Most outcomes only showed lower levels of contribution reported by seniors in at most one

of the years surveyed. However, seniors reported lower levels relative to freshmen of institutional contribution to understanding people of other racial and ethnic backgrounds in three of the four years surveyed. This pattern was similar at other institutions as Fitchburg State mean senior scores for this outcome were significantly lower than their peers only in 2006. The other area that showed the least improvement from freshman to seniors was developing a personal code of values and ethics, for which seniors reported the same levels of contribution of the institution as freshman in 2004 and 2006 and slightly lower levels in 2012. While these levels were significantly lower than their peers in only 2006, overall levels were consistently low (<60%). Because the institution's contributions to a student understanding people of other racial and ethnic backgrounds and developing a personal code of values and ethics were consistently reported by freshmen and seniors at the lowest levels and in a number of cases at levels lower than other institutions, there is room for improvement in these areas. Finally, while levels of institutional contribution reported by seniors for writing, speaking, critical thinking, and analyzing quantitative problems were generally on par with our peers in prior years, our seniors reported significantly less contribution of the institution to these outcomes in 2012 than students from other institutions. Therefore we should also be cautious to insure an ongoing emphasis in these areas, and to carefully analyze our teaching practices that could impact these areas (see below).

Table 4: To what extent has your experience at this institution contributed to your knowledge, skills and personal development in the following areas? 1 = very little, 2 = some, 3 = quite a bit, 4 = very much

		2004 % 3/4	2006 % 3/4	2009 % 3/4	2012 % 3/4	2012 NE Public	2012 Masters
Acquiring a broad, general education	Fr	75%	71%	84%	80%	78%	81%
	Sr	82%	77%	83%	85%	81%	82%
Writing clearly and effectively	Fr	73%	70%	76%	78%	75%	75%
	Sr	61%	70%	77%	79%	78%	78%
Speaking clearly and effectively	Fr	54%	56%	61%	66%	64%	69%
	Sr	66%	69%	76%	71%	69%	74%-
Thinking critically and analytically	Fr	77%	71%	83%	80%	80%	83%
	Sr	88%	80%	85%	79%	87% ---	86% ---
Analyzing quantitative problems	Fr	53%	56%	67%	68%	69%	72%
	Sr	57%	69%	74%	71%	74%	76%-
Understanding people of other racial and ethnic backgrounds	Fr	42%	44%	55%	48%	49%	58%-
	Sr	39%	43%	52%	52%	53%	57%
Solving complex real-world problems	Fr	48%	42%	57%	59%	55%	59%
	Sr	54%	49%	63%	59%	60%	64%
Developing a personal code of values and ethics	Fr	46%	40%	55%	60%	52%	58%
	Sr	46%	40%	58%	59%	57%	61%

Course Assignments and Discussions (continued): Speaking, Writing and Community Projects

In terms of classroom assignments that could promote some of the learning outcomes with which we are concerned, our freshmen have reported significantly less frequency of class presentations relative to other comparable institutions in 2009 and 2012, and less frequency of community-based projects in 2006 and 2012 (Table 5). Neither of these areas has shown an overall increase from 2004 to 2012, and community based projects remain a particularly rare occurrence in freshmen courses (<15%

often or very often). While there has been an increase reported by freshmen in the frequency of preparing two or more drafts of a paper or assignment from 2004 to 2012, the frequency reported at Fitchburg State lagged significantly behind the frequency reported at other institutions in every year surveyed.

Seniors reported higher frequencies of making class presentations and participating in a community-based project than freshmen in each year of the survey. However, the difference was much more pronounced for making class presentations, and this activity's frequency as reported by seniors was only significantly lower than other institutions in 2006. Senior frequency of participation in a community-based project lagged behind other institutions in 2004 and 2012. In contrast to the other activities, preparing two or more drafts of a paper tended to occur with less frequency in seniors relative to freshmen both at Fitchburg State and other institutions. In spite of this shared pattern across multiple institutions, Fitchburg State seniors reported significantly lower frequencies of preparing two or more drafts of a paper or assignment than their peers in 2006, 2009, and 2012. Therefore, while requiring presentations may represent a potentially underutilized strategy in our freshmen courses, strategies that promote preparing two or more drafts of a paper or assignment may be underutilized relative to our peer institutions in both introductory and advanced coursework. Finally community-based projects are utilized at very low rates both at Fitchburg State and other institutions, representing another strategy that could potentially be implemented more broadly to achieve desired learning outcomes.

Table 5: In your experience at your institution during the current school year, about how often have you done each of the following? 1 = never, 2 = sometimes, 3 = often, 4 = very often

	Year	2004 % 3/4	2006 % 3/4	2009 % 3/4	2012 % 3/4	2012 NE Public	2012 Masters
Made a class presentation	Fr	29%	32%	29%	28%	38%-	37%-
	Sr	71%	53%	65%	61%	56%*	62%
Prepared two or more drafts of a paper or assignment before turning it in	Fr	34%	43%	53%	50%	61%---	60%--
	Sr	49%	36%	40%	48%	55%--	50%
Participated in a community-based project (e.g., service learning) as part of a regular course	Fr	15%	7%	10%	8%	11%---	14%---
	Sr	12%	17%	14%	14%	16%-	21%---

* New England Public senior students reported significantly lower frequency of making class presentations relative to Fitchburg State students in 2012.

Writing (continued)

A further analysis of student writing based on NSSE reports of the number of papers with page lengths of 20 or more, 5-19, or less than 5 reveals that Fitchburg State students at freshman or senior level have each reported writing significantly fewer papers of 20 or more pages than their peers in two survey years (2012 and 2009 for freshmen and 2009 and 2006 for seniors). On the other hand, Fitchburg State freshmen have reported writing significantly more papers than their peers of 5 or fewer pages in

2004, 2006, 2009 and 2012. Fitchburg State freshmen also reported writing significantly more papers of 5-19 pages than their peers in 2006 and 2009, but not 2012 in which they wrote significantly fewer papers of this length than their peers. In contrast, seniors reported writing significantly more papers of this length than their peers in 2012. Overall, it appears there is less emphasis at Fitchburg State on teaching strategies that involve papers over 20 pages in length, but a greater emphasis on papers shorter than 20 pages. There is no evidence to suggest an overall lack of writing assignments.

Enriching Educational Experiences: High Impact Practices

Table 6: Which of the following have you done or do you plan to do before you graduate from your institution? (Percentages represent students who plan to or have done the activity (3 or 4), while for statistical analysis the values have been recoded: 0= 1-Have not decided, 2-Do not plan to do, 3-Plan to do; 1=4- Done. Thus, the mean used to detect the Fitchburg state results noted in bold and underlined that are significantly lower than peer institutions, and the indications of the level of significance of any difference for 2012 NE public and 2012 public masters is for the proportion responding "Done" among all valid respondents. * denotes results that are significantly higher than peer institutions)

		2004 % 3/4	2006 % 3/4	2009 % 3/4	2012 % 3/4	2012 NE Public	2012 Masters
Practicum, internship, field experience, co-op experience, or clinical assignment	Fr	87%	82%	87%	88%	80%	81%
	Sr	72%	74%	74%*	81%*	79%	77%
Community service or volunteer work	Fr	67%	61%	69%	62%	74%---	79%---
	Sr	53%	62%	66%	68%	70%	75%--
Participate in a learning community or some other formal program where groups of students take two or more classes together	Fr	30%	27%	32%	34%	42%---	44%---
	Sr	30%	30%	34%	31%	35%-	39%--
Work on a research project with a faculty member outside of course or program requirements	Fr	17%	18%	26%	26%	35%	39%-
	Sr	20%	28%*	24%	26%	30%	34%
Foreign language coursework (Diversity/Global Learning)	Fr	32%	33%	31%	31%	36%	49%-
	Sr	32%	29%	27%	34%	35%	45%-
Study abroad (Diversity/Global Learning)	Fr	23%	26%	36%	27%	37%---	39%---
	Sr	11%	6%	15%	16%	15%	19%
Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)	Fr	16%	35%	38%	31%	49%	48%
	Sr	34%	57%	60%*	58%	72%	65%

Internships: Internships and other field-based experiences appear to be an increasingly distinguishing feature of a Fitchburg State University education. Fitchburg State freshmen students come in planning to do them at a higher rate than other institutions, and in 2009 and 2012 seniors reported having done internships, practica, field experiences or clinical assignments at a significantly higher rate than students at other similar institutions. This is no doubt influenced by large programs in communications media, education, and media, but it also reflects on the overall nature of the student experience.

Service learning, Community-based learning: In spite of the large number of students we have out in the field on internships and similar experiences, Fitchburg State students report planning to and engaging in community service or volunteer work less than their peers at other institutions. The proportion of seniors who had completed this kind of work was significantly lower than our peer institutions' results in 2004 and 2012, and significantly lower proportions of freshmen students reported having done this kind of work in 2006 and 2012 suggesting it is not as great an emphasis on this campus as on others. Nonetheless, almost 50% of our seniors in 2012 reported having done this kind of work, a higher level of participation than in any of the other high impact practices apart from internships or service learning. This represents a potential opportunity to spread these types of experiences campus-wide without as much change as would be required for some of the others.

Learning Communities: Learning Communities have been a popular concept in higher education for at least the last 10 years. Fitchburg State has only experimented in a small way with a few of them. For some reason in spite of their relative absence on campus, 19% of Fitchburg State seniors reported having participated in one, or something similar at the University on the 2012 NSSE survey. Nonetheless, the growth in popularity of this particular high impact practice has caused us to lag behind similar institutions in the proportion of students reporting having participated in one. Given that they are usually a freshman level experience, and their widespread adoption has been relatively recent it is natural that there were a significantly greater proportion of students at other institutions reporting having completed them as freshmen in 2006, 2009 and 2012. As those students progressed through their programs of study, the difference appeared in seniors only in 2012.

Undergraduate Research: Both freshman and seniors at other institutions report planning to do and/or having completed research with a faculty member more than Fitchburg State students. However, the proportion actually completing research by their senior year is not that different. In fact in 2006 Fitchburg State seniors reported significantly more involvement in research than their peers. The only instances of significantly less reporting of completing research came with freshmen in 2006 and 2012, suggesting perhaps there are opportunities to engage students even earlier in undergraduate research.

Diversity/Global Learning: While high impact practices related to diversity and global learning often focus on highlighting cultural, racial, ethnic, religious or gender differences and related issues, these programs are usually supplemented by study of languages, and study abroad. Fitchburg State lags significantly behind other institutions in the proportion of students having completed foreign language studies at both the freshman and senior year for all surveys except 2004 freshmen. On the other hand while 2004 and 2006 surveys revealed significantly lower levels of study abroad participation at Fitchburg State, those differences are not as pronounced in recent surveys, appearing only as a greater proportion of freshman reporting having studied abroad at peer institutions in 2012.

Capstone Courses and Projects: Fitchburg State freshmen and seniors appear to report less often that they plan to do a capstone course, but in the end the proportion of them actually completing capstone courses by their senior year is comparable to our peer institutions. In fact, Fitchburg State University seniors in 2009 reported participating in capstone experiences more than their peers at other institutions. Like internships and field experiences, this represents a potential hallmark of a Fitchburg State education as in 2012 over 1/3 of seniors reported having participated in one. However, more work would need to be done to build on these numbers and to insure that a greater proportion of freshmen are aware of and plan for these experiences.