Gender Matters
The educational experiences of men and women students at St. Norbert

St. Norbert College 2009

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Introduction

Since 2001, the Office of Institutional Effectiveness has mined the available data to learn more about how students experience St. Norbert College (e.g. Who Are Our Students?, Student Satisfaction, A Retention Album, Spirituality at St. Norbert College, Data-based Review of General Education, Mission Effectiveness). Treating the student body as a homogenous entity is not uncommon in exploratory studies of this sort. As Harrop, et al (2007) point out, “Much of the research in higher education has treated student bodies as homogeneous groups with a consequent neglect of any consideration of gender differences.” (p.385) This report attempts to address this inadequacy by investigating whether men and women students experience St. Norbert College differently.1

There is extensive evidence to support the assertion that women and men do experience college differently. Summarized in the next several paragraphs are selected findings from a few recent studies.

In their 2007 review of the literature entitled “Gender Matters in Higher Education”, Harrop, et al2 cite numerous findings relevant for this analysis. For example, researchers have noted “differences in the social interactions and use of support networks between male and female degree students.” (p. 386) In addition, “male students visited faculty members and instructors more often than female students on an informal basis, while female students visited more often to discuss specific course-related or personal issues. Females rated their relationships with both faculty members and other students more positively than did males.” (p.386)

“No significant differences were found between males and females on stress and coping, but females reported receiving significantly more support from three sources-- family, friends and significant other” (p. 387). In addition, “female students reported significantly higher time-management skills than males.” (p. 387)

“Females were more likely than males to rate the costs they had incurred as significant or very significant (for ‘financial costs’, 67% of females versus 46% of males; for ‘personal costs’, 79% of females versus 58% of males; for ‘home life’, 61% of females, 50% of males). However, when asked about the anticipated benefits of studying, there were very few gender differences, although females were slightly more optimistic than males in

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1 Many of the findings in this monograph are based on results of national surveys administered to SNC students through the OIE. The surveys are products of the Higher Education Research Institute (HERI) at UCLA. The important work of Alexander Astin (now Director Emeritus of HERI) and Linda Sax (former Associate Director of HERI) on gender differences in college is addressed in Chapter 6.

anticipating benefits, especially regarding ‘personal benefits’, with 13% more females responding positively than males.” (p.387)

Women students rated 3 pre-course aims (improve career opportunities, learn more about a subject of interest, widen horizons) significantly higher than men (p. 388) and considered ‘Independent project work’ considerably more interesting than males (Table 6).” (p. 389)

“As regards reported skill changes since the start of the course, there are no statistically significant differences in the reports, although it is worth noting that females reported more improvement than males for nine of the 12 skills.” (p. 392) However, “females found more difficulty than expected in ‘coping with exam stress’, while males reported less difficulty than expected.” And, females reported more difficulty than expected in ‘developing confidence in their academic ability’, while males reported less difficulty than expected.” (p. 390)

According to Sawchuk (2008)³ “Statistically, boys are much farther behind girls in writing than girls are behind boys in math and science, according to the data.” (P. 1)

Kettley, et al (2008)⁴ present additional findings. “Gender was shown to play a role in students’ attitudes toward debt; fewer women in Hesketh’s (1999) study took out student loans as a result of their financial concerns.” (p. 112) “Many of these women, unlike most men, were also worried about the impact of student debt on their life after graduation.” (p.117) “Irrespective of social class, men in our survey were less likely to express financial worry, were less likely to record restrictions on their spending and had a more positive sense of well-being than women.” (p. 118)

“Well-being for many women was, therefore, an inter-personal psychological state; a low sense of well-being reflected anxiety about the impact of their education on others both in the present and future.” (p. 117) “While employment promoted independence, it did not reduce female worry, because many women became preoccupied with the impact of paid work on their attainment.” (p. 117) “Most women and men in our sample came from middle-class backgrounds. However, women perceived themselves to be worse off, worried more and had a reduced sense of well-being.” (p. 126)

Bryant (2007)⁵ notes the following differences associated with developing spirituality.


“Women scored higher than men did on dimensions related to spirituality, spiritual quest, and self-rated spiritual/religious growth. That is, they indicated an interest in spirituality, claimed to have had spiritual experiences, were seeking spiritual virtues in life (answers to life’s mysteries, beauty, wisdom, meaning, etc.), and believed that they had undergone positive changes in their religious convictions and spirituality during college. An outward extension of their inner spiritual sensitivities, women also tended to be more involved in charitable activities, concerned with social activism, and more likely than men to perceive themselves as compassionate individuals.” (p. 840) Furthermore, “men exhibited lower levels of spiritual struggle than women did.” (p. 840) Finally, “students generally became more committed to integrating spirituality into their lives over 3 years of college. However, when men and women were compared, the gender difference widened over time.” (p. 840)

Mastekaasa & Smeby (2006) point out that although “Women now make up more than half of all higher education students in many countries in the industrial world. The distribution of men and women across fields of study is, however, still very uneven (Bradly, 2000; Jacobs, 1996; Storen & Arnesen, 2003).” (p. 190) “Women have a much higher dropout probability in gender relatively balanced and male-dominated programmes than in female-dominated ones.” (p. 200)

The final paragraph of Harrop’s 2007 review provides a suitable context for this analysis of how male and female students experience St. Norbert College. “In conclusion, it seems very likely, in view of our results and those of other studies, that there are significant differences between male and female students in the way in which they experience higher education. As a consequence, it is important to stress that any research and institutional assessment that neglects gender is in danger of obtaining spurious results. Gender does matter in higher education.” (p. 395)

We hope you find this exploratory analysis interesting and useful. We welcome your comments and/or suggestions for additional analyses and are deeply appreciative to Karlyn Crowley, Director of the Women and Gender Studies Program, and Billy Korinko, Men’s Initiative Coordinator, for beginning the dialog in the Afterwards at the end of this monograph.

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What First Year Students Bring to St. Norbert

Men and women begin their education at St. Norbert with some important differences. First year women, for example, have higher average HSGPAs when compared to their male counterparts. The first year class of 2008 is typical. The HSGPA for entering women in this cohort is 3.44, compared with 3.18 for men. The difference of about a quarter grade point is statistically reliable (later in this monograph, we will see if this difference in academic achievement persists during their college years).

On the other hand, more first year men entering SNC have (on annual administrations of The Freshman Survey from the Higher Education Research Institute) consistently rated themselves as either “above average” when compared to “others my age,” or “in the top ten percent” on a variety of skills and abilities. Again, findings from the 2008 administration of The Freshman Survey are typical (and statistically reliable). On self-ratings of...

- Computer Skills
- Emotional Health
- Physical Health
- Popularity
- Intellectual Self-Confidence
- Social Self-Confidence
- Ability to discuss and negotiate controversial issues

...greater percentages of entering men rated themselves “above average” and/or “in the top ten percent” when compared with age peers than did entering women. We take no stand on the accuracy of such self-ratings, or on the possibility that response bias (exaggeration for men and/or excessive modesty for women, for example) plays a significant role in these differences. We merely assert the differences are repeatable from one year to the next and therefore are consistently present. Further, these differences in self-ratings are potentially valuable in understanding the differing educational experiences of our men and women.

The differences between entering men and women extend to the questions we append to The Freshman Survey, questions related to the Mission of the College. Looking at the 2008 class of first year students, a statistically greater percentage of entering women, when compared with male peers, say it is “Very True” that they...

- can Build relationships based on mutual respect
- can State the ethical principles that are personally important to me
- Act in ways consistent with my ethical/moral principles
- can Take the initiative to learn on my own
- can Manage [their] time effectively
- Know [their] personal strengths and limitations
- Listen carefully when others talk to me
Again, we don’t know how accurate these self-perceptions are. But it is quite possible these beliefs-about-self have some impact on choices and behaviors as our students navigate through the curricular and co-curricular experiences available to them during their four years at St. Norbert.

Our entering men and women also differ to some extent on their goals for the first year. The majority of both sexes chose either…

- Learn how to balance my academic and social life or
- Obtain the best grades I can

as their most important goal for the first year. But a larger minority of women than men select: Become more independent and self-sufficient as a goal, while a greater minority of men than women choose Make new friends with students having different backgrounds than myself. (Interestingly, about a third of first year women in 2008 report that “Seeks relationships with persons of different ethnicity, gender orientation or values” best reflects their view of “Understands and appreciates human differences,” while only about one-fifth of males do.)

Differences between our entering men and women are even greater in their understanding of what “responsible citizenship” means. An almost-majority of both sexes ascribe to, “Obey laws, pay taxes, and serve the nation when called” as their definition. But 40% of 2008 first year women choose, “Serve the community by helping others” as their definition, compared with about 27% of men. This focus on service is strong. Almost 50% of 2008 first year women, for example, asserted that the desire to “be involved in community service projects while in college” was very true of them. Less than 20% of 2008 men reported the same.

Men and women who select St. Norbert emphasize different reasons for their choice. Greater percentages of entering women report that wanting to live near home, and the College’s size and religious affiliation, were “very important” bases for choosing to attend SNC. More first year women in 2008 also mentioned that information from a website and a visit to campus played a “very important” role in their selection. For about a third of the men, recruitment by the athletic department was “very important.”

A Note on Gender Differences
Of course, the differences discussed thus far, and those to follow in later sections of this monograph, are relative. Not every woman student, for example, thinks that the College’s size is a “very important” reason to attend SNC. And a percentage of men do. There is overlap between the sexes on virtually every difference we have found. This overlap should discourage unqualified generalizations of the type, “Women choose St. Norbert because of its size,” which seems to implicitly suggest “all women” do and “no man” does. The temptation to oversimplify needs to be resisted in the interest of honesty and accuracy.

A related point: we omitted from discussion here (and generally will continue to do so throughout) the large number of academic, social, and personal characteristics on which
our women and men do not differ in a statistically-reliable manner—that is, the ways in which they are similar. Why the omission?

Although a case can be made that the sheer numbers of similarities between the sexes outweigh their differences, it is less clear that the similarities are more important than the differences in influencing the academic and social journeys undertaken by our students as they move from matriculation to graduation. The informed understanding of these differences offers the potential to enhance the benefits students of both sexes receive from their St. Norbert education.

First Year Male/Female Differences over Time: Trends, 2000-2009

As illustrated above, first year men and women arrive at the College differing in a number of respects. Some of the differences are robust, apparent year after year. Others are less predictable.

Much of the information we have on these men/women differences comes from the CIRP (now called the TFS—The Freshman Survey), a national survey administered at St. Norbert since 1971. The survey is distributed annually by the Higher Education Research Institute at UCLA. Our exploration here is limited to entering first year student cohorts from 2000 through 2009. Survey information from these cohorts is likely to give a valid picture of our entering students, since approximately 95% of each annual student cohort completed surveys.

We selected a sample of items from the TFS. The sample provides information on demographics, reasons for choosing SNC, life goals, and self-rated abilities. This “snapshot” provides an entrée into the experiential world of the men and women who matriculate at St. Norbert.

Catholicism and Related Matters

Most (about 95%) men and women who attend St. Norbert are Caucasian. But the percentage of entering students reporting their religious affiliation as Catholic is less than that, as Figure 1.1 below shows. Since 2003, more women than men report they are Catholic. And, since 2005 the percentage of Catholics has declined for both sexes. The “uptick” in the entering class of 2008 was followed by a continuation of the downward trend in 2009. Indeed the first year cohort of 2009 is the first to show the percentage of Catholics for both women and men below sixty percent.

(Figure 1.1 on next page)
Figure 1.1. Percent entering students reporting religious preference as Catholic.

The differences in the percentage of men and women who are Catholic wax and wane over time. Not so the differences between the sexes on the importance of the College’s Catholic identity. Women, more than men, rate SNC’s religious affiliation as a “very important” reason they chose to matriculate here. Figure 1.2 below shows this clearly.
Although the gender difference in Figure 1.2 is clear, note that only a minority of both women and men (roughly 22% and 12%, respectively) report St. Norbert’s religious affiliation as a “very important” reason for coming to St. Norbert. This is so even though a majority of both sexes in entering first year class cohorts identify themselves as Catholic. The subset of Catholic students for whom the College’s Catholic affiliation is very important would seem to be good candidates for involvement in liturgical and related activities on campus.

Compared with men, more entering women students consistently report that helping others in difficulty is an “essential” or “very important” life goal. Figure 1.3 shows clearly that 70%-75% of women so-report, compared with 50%-60% of men.
These altruistic sentiments show much less variability from one year to the next than self-rated spirituality, shown in Figure 1.4 below. When entering students are asked to rate their spirituality compared to other persons my age, first year men in particular show a great deal of variability from one year to the next.

Figure 1.4 shows the percent of first year men and women each year rating themselves “above average” or in the “top 10 percent” on spirituality. Note the greater variability for first year men. Their percentages range from slightly over thirty percent to almost fifty percent. First year women show a narrower range, about ten percentage points from lowest to highest year.
Since 2001, there has been only modest yearly variability in self ratings of spirituality by our entering SNC women. The trend over time appears to be essentially “flat,” with about 40%-45% of each annual cohort of women rating themselves above average or higher. The 2006-2009 entering student data shown in Figure 1.4 suggest that men, too, may be “narrowing” their annual variability on this self-rating.

**Political Orientation**
Since cohort year 2000, there has been about a ten percentage point drop in the number of entering women and men who describe their political orientation as “Middle-of-the-Road.” The separate charts for women (Fig. 1.5) and men (Fig. 1.6) below show that this loss is largely attributable to an increase in first year students describing themselves as “Conservative.”

There are some differences between men and women, also visible in these two figures. For example, a greater percentage of women students (app. 8%-10%more) describe themselves as middle-of-the-road. Conversely, an increasingly greater percentage of men entering SNC describe themselves as conservative.
The 2008 first year men showed a sharp reversal of the trend toward conservatism, a reversal possibly associated with the Presidential campaigns that year. The decline in the percentage of self-described conservatives meant an increase in both moderates and liberals. The entering class of 2009, however, suggests that men may be returning to their previous status, where more males report themselves to be conservative than liberal in political orientation.

Figure 1.6. Political ideology of entering men.
Reasons for Choosing St. Norbert

As noted earlier in this chapter, a greater percentage of women students report that St. Norbert’s religious affiliation is an important reason for choosing the College. Similarly, as Fig. 1.7 shows, a greater proportion of women are attracted by the College’s size.

Between 60%-70% of entering first year women report that the College’s (small) size is a “very important” reason for their decision to attend St. Norbert. Only about 35%-45% of first year men are as enthusiastic about St. Norbert’s size.

Figure 1.7. Percent entering students identifying college size as “very important.”

Institutional size and religious affiliation, although demonstrably important factors affecting choice of SNC, are probably not as central to many potential SNC first year students and their parents as perceived academic quality and the likelihood of post-graduation employment. As Figure 1.8 shows, between 70%-80% of SNC entering men and women indicate that the College’s “very good academic reputation” is a “very important” reason for choosing to attend.

Although consistently fewer men than women emphasize academic quality in their choice of SNC, the difference is relatively small (less than ten percentage points) and—with the exception of the 2004 first year class—the percentage of “very important” ratings never falls below 70%.
The perception that “graduates get good jobs” appears to be an important reason for choosing SNC for slightly more entering women than men. This finding is not quite as clear as the results for academic quality, first because data are missing for 2002 and 2003 (when the item was not included in the survey) and also because of a virtual tie in 2005. The slight decline for both men and women in 2009 is unusual, given economic conditions at the time.

Figure 1.9. Percent entering students identifying prospects for post-graduation employment as very important.
Life Goals

_Raising a family_ has been an increasingly-stated goal for both men and women entering St. Norbert. In recent years, more than four out of five women _and_ men rate this goal as “essential” or “very important.” _Figure 1.10_ shows trends for both sexes.

**Figure 1.10.** Percent entering students identifying _raising a family_ as very important.

<table>
<thead>
<tr>
<th>Year</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td></td>
<td></td>
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<td>2008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
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</tr>
</tbody>
</table>

There has been a gradual upward trend in the number of first year students emphasizing the importance of this goal. The trend is less clear for women, whose percentage in 2008 dropped to just above the level in 2000, but then rose again in 2009. Men showed a slight decline in 2008 and 2009 from their peak level in 2006, although their overall upward trend from 2000 is still holding.

While the importance of raising a family has increased for both entering men and women, the importance of “becoming an authority in my field” as a life goal has decreased from its peak level in 2002. The decline, visible in _Figure 1.11_, appears to be greater for women than for men, with a noticeable drop for the women of the entering class of 2009. If this decline continues, the gap between men and women on this life goal will only increase.

We do not know the reason(s) for the decline since 2002. One hypothesis is that the word, “authority,” has come to take on negative connotations for women because of its suggestion of hierarchy. If so, the trend visible in _Figure 1.11_ might well be altered if the word, “expert,” were substituted in its place. This substitution has not been tested, however.
In the section of this chapter on Catholicism and Related Matters, we provided a chart (Figure 1.3) showing that the life goal of “helping others in difficulty” is consistently viewed as “essential” or “very important” by more women than men. In contrast, Being Well-Off Financially (Figure 1.12) shows the reverse.

Figure 1.11. Percent entering students identifying becoming an authority in my field as “very important.”

Figure 1.12. Percent entering students identifying becoming very well off financially as “very important.”
Note that women in 2008 and 2009 were much more like men than previously. It is plausible that recent economic conditions are associated with this change, although data from Figure 1.9 (“Graduates get good jobs”), above, which shows a drop for 2009 first year students, seems inconsistent with the rise shown in Figure 1.12.

**Self-rated Abilities and Skills**

Typically, 65% or more of our entering men and women rate their *academic ability* as “above-average” or “top ten percent” when compared to “other persons my age.” There does not appear to be a trend for the percentage of these self-ratings by either sex to either increase over time or decrease.

*Academic ability* is an essential base for successful completion of a college education—probably the essential base. It is not surprising, therefore, that about two-thirds or more of entering SNC students of either sex view themselves as at least above-average in academic ability (as indeed most of them are, at least when compared with their high school senior classmates), and that they provide this level of self-rating from one year to the next.

**Figure 1.13.** Percent entering students rating self “above average” or “top 10%” in *academic ability.*

![Graph](image-url)

Somewhat similar (but more variable) findings regarding another essential ability (writing) can be seen in Figure 1.14. Approximately half of first year students rate their writing skills above-average. Men from the entering class of 2009 show a commendable return to that level, after two previous years of apparent decline.
Figure 1.14. Percent entering students rating self “above average” or “top 10%” in writing ability.

With one exception (the entering class of 2005), more women than men have rated their drive to achieve above average or higher when compared with age peers. In general, however, as Figure 1.15 shows, the differences have typically been modest.

Figure 1.15. Percent entering students rating self “above average” or “top 10%” in drive to achieve.
In contrast to the *drive to achieve*, more first year men consistently rate their *leadership ability* “above average,” or “top 10%” as Figure 1.16 shows. As will be seen in later chapters of this monograph, there is some evidence to suggest that the *drive to achieve* is associated with high academic achievement and involvement, particularly for women. The impact of *Leadership* self-ratings on student behaviors after matriculation is harder to discern, perhaps because there is less clarity in how self-ratings here might impact academic achievement (with its very visible manifestation in course grades and GPA).

**Figure 1.16.** Percent entering students rating self “above average” or “top 10%” in *leadership ability*.

![Graph showing percent rating above average or top 10% in leadership ability from 2000 to 2009 for men and women.]

**Comments on Self-Ratings:** The self-ratings reported in this section are difficult to interpret for several reasons. First, we do not know what basis (or bases) students use for the ratings, or whether the reasons for the self-judgments made are identical (or at least similar) for men and women.

*Leadership* illustrates these uncertainties. How does one know his or her leadership ability is above-average? Roughly 70%-80% of men entering SNC provide this rating, as do about 60%-70% of women. That’s a lot of leaders; it is unlikely all these students were elected to some leadership position in high school, for example. But perhaps participating in athletics in any way qualifies, particularly if coaches emphasize that every athlete needs to “display leadership” in their sport. We do not know.

Similarly, we do not know if the reference group “other persons my age” has a uniform meaning for the sexes. How does a student gain knowledge of this highly abstract comparison group, knowledge sufficient to make the required rating? Who really is included in the “other persons my age” group? Acquaintances? Close friends and
buddies? The student’s classmates? And does this reference group change from rating to rating (academic ability, say, versus leadership)?

These unanswered questions mean that unequivocal interpretation of the self-ratings above, or of the gender differences apparent in some of the corresponding charts, is not possible. Still, shrouded in uncertainties as they are, the data are still meaningful. Asked to rate their leadership ability, more entering men—on average—view themselves above-average or more. Similarly, asked to rate their drive to achieve, more women students—on average—rate themselves above average or higher. Those are facts.

Further, self-perceptions help round out our understanding of students. They provide a window, however opaque, into their inner life. Even so, it can be argued that—in isolation—self-ratings do not provide much useful information. Viewed, however, as the starting point for an exploration of their correlations with other variables and with later behaviors while students attend SNC, they begin to assume more utility and vitality.

Summary: First Year Male/female Differences over Time

Keeping in mind that the differences between SNC men and women are relative and not absolute, we know that

MORE WOMEN…

- report their religious preference as Catholic
- say an important reason for choosing SNC is its religious affiliation
- are attracted to SNC because of its size
- describe themselves as politically “middle-of-the-road”
- report that helping others in difficulty is an essential life goal
- rate their “drive to achieve” as above-average/top 10% compared with age peers

MORE MEN…

- describe themselves as politically “conservative”
- report that “being well-off financially” is an essential life goal
- have more “leadership ability” self-ratings above-average or top 10% compared to female age peers

ABOUT AN EQUAL NUMBER OF MEN AND WOMEN…

- describe themselves as politically “liberal”
- choose SNC for it’s perceived academic reputation and post-graduate employment opportunities
- state that “raising a family” as an important life goal
- rate their academic and writing abilities “above average” or “top 10%” compared with peers.

The first year gender differences discussed above are not intended to be exhaustive, but instructive—reminders that differences between women and men students in academic performance, self-perceptions, values, goals and so on are present even before they are
exposed to SNC’s educational and social environments. The influence of these environments on student learning will interact with the gender histories of our students.

St. Norbert first year students are not unique in manifesting numerous differences between the sexes. National studies conducted by the Higher Education Research Institute (HERI) at UCLA using the same Freshman Survey have documented extensively numerous gender differences in the United States college-bound population. The most recent (and detailed) publication on this topic from HERI is Linda Sax’s The Gender Gap in College (Jossey-Bass, 2008), to which the interested reader is referred.
In the first chapter we noted that men and women entering St. Norbert arrive with somewhat different records of academic achievement in high school. More specifically, first year women as a group enter SNC with a mean HSGPA modestly (but reliably) higher than first year men. Since HSGPA is the best “input” predictor of college GPA, it is reasonable to assume a difference in GPA will persist in college. Does the evidence support this hypothesis?

Differences in GPA
The answer is yes. The evidence comes from several sources. Looking at our Senior Survey sample of over 2000 SNC seniors from graduating classes 2000 through 2006, for example, shows that 21% of women report a cumulative “A” average at SNC, while only 10% of men do. The 2008 sample of seniors on the same instrument shows an improvement for men—14% report an “A” average—but women continued to maintain their “double” lead, with 28% reporting an “A” average.

One need not rely on self-reports for the finding that academic achievement—as measured by GPA—is higher for SNC women than men. For the 1,942 students enrolled during academic year 2007-2008, cumulative SNC GPAs were 3.16 for women and 2.84 for men. (Women in this enrolled cohort entered SNC with a mean HSGPA of 3.48, compared to a 3.18 HSGPA for men.) These results are summarized in Table 2.1 below.

<table>
<thead>
<tr>
<th>2007 Enrolled</th>
<th>Women</th>
<th>Men</th>
<th>Difference (W – M)</th>
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<td>HSGPA</td>
<td>3.48</td>
<td>3.18</td>
<td>0.30</td>
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<tr>
<td>SNC GPA</td>
<td>3.16</td>
<td>2.84</td>
<td>0.32</td>
</tr>
</tbody>
</table>

The “GPA gap” between SNC men and women is close to 1/3 of a grade point, a difference that is present for HSGPAs and continues at SNC (interestingly, both sexes drop about the same amount—approximately 1/3 grade point—from HSGPA to SNC GPA).

A look at the first year yields similar findings. We reviewed data from first year students entering SNC in fall, 2007, and followed their first and second semester SNC GPAs. Table 2.2 below shows what we found.

<table>
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<th>Men</th>
<th>Difference (W – M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSGPA</td>
<td>3.56</td>
<td>3.26</td>
<td>0.30</td>
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<tr>
<td>1st Sem GPA</td>
<td>3.07</td>
<td>2.71</td>
<td>0.36</td>
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<td>2nd Sem GPA</td>
<td>3.15</td>
<td>2.80</td>
<td>0.36</td>
</tr>
</tbody>
</table>

The findings in Table 2.2 are similar—but not identical—to the more global results in Table 2.1. The GPA “gender gap” is everywhere visible, but there are subtle differences between the two tables.
Note first that the differences between SNC GPAs of women and men are slightly greater for first year students than for the entire 2007 enrolled cohort as a whole (0.36 vs. 0.32). This finding holds for both semesters of the first year.

For both sexes, GPA decreased from high school through first year college, but the GPAs for men “took a bigger hit,” accounting for the wider gender difference in GPA during both semesters. The first semester reduction in GPA from high school levels was (0.55) for men and (0.49) for women. Improvement in GPA from first to second semester was slightly greater for men, however (0.09 men, 0.08 women). Thus first semester decreases from HSGPA were ameliorated, but not eliminated, by improved second semester GPAs.

That GPAs for both women and men increased from first to second semester is not too surprising. Students who returned for 2nd semester had many of the distracting adjustments to college life behind them, allowing greater focus on academic matters. In addition, first year students who had not fared well in the first semester, GPA- and otherwise, were no longer in the cohort providing 2nd semester GPAs.

Section Summary
SNC men and women differ in academic achievement, at least as measured by global GPA, with women averaging higher GPAs than men. The gap is present at matriculation and persists to graduation.

Variables Associated with the Academic Achievement of Women and Men
We hypothesized that responses to several questions on the Senior Survey might show relationships with the academic achievement (GPA) of SNC men and women. The questions (variables) we chose to study are of an obvious academic nature. They are listed below:

- Enrollment in honors or advanced courses
- Work on independent study projects
- Meeting with faculty outside class
- Discussing course content with peers outside class
- Tutored other students
- Studying with other students
- Reported hrs/week in class/labs
- Reported hrs/week studying/doing homework

There are two ways the variables listed above could differentially affect the academic achievement of male and female students. First, the sexes could differ on the actual variables themselves. For example, a statistically greater percentage of men might report working on independent study projects than women.

Second, a particular variable may be correlated with GPA for one sex but not the other. For example, meeting with faculty outside class may have an association with women’s GPA, but not men’s GPA. Of course it would be possible for one or more of the variables above to show both types of associations—differences between men and women and impact on one sex but not the other—or neither association.
Our method of choice to explore our hypotheses here was cross-tabulation. Questionnaire items (with their limited response options) are ideal candidates for this statistical technique, as are nominal (identification) variables with limited categories, such as “gender.” Data in the cell grid of rows and columns provides much more information than would a summary “mean response score,” say.

Let’s look first at whether men and women differed on the actual variables themselves. Unless otherwise noted, information comes from Senior Survey respondents from 2000 through 2006. This extensive sample of over 2000 seniors is large enough to detect differences between the sexes on all variables of interest. In addition, since it spans seven senior cohorts, it reduces the impact of any year-to-year extraneous variation on our analyses.

**Differences Between Women and Men on Academic Variables**

A greater percentage of SNC women report *enrolling in honors or advanced courses*. Although only a minority of both sexes report doing so, the four percentage point difference between women (17%) and men (13%) is statistically reliable. Whether or not this difference is practically important is unclear. But the finding is consistent with fact that more women than men enter SNC with higher GPAs, providing a larger pool of potential honors course candidates.

Approximately half of SNC seniors report *working on independent study projects*, with no reliable difference between women and men. Similarly, the number of *hours per week* reported *talking to faculty outside class* was virtually identical for both sexes. Just over 90% of women and men report doing so “1-5 hours/wk.” Slightly more women than men report *discussing course content outside class with other students*, but the difference is slight—69% of females report “frequent” discussions of this type, compared to 66% of males.

Response rate differences are much more distinct for the item, *tutored another student*. Thirty-four percent of women reported they had done so, compared with 24% of men.—a ten percentage point difference. Serving as a tutor is certainly an academic activity, and one that students with higher GPAs and a service orientation are most likely to do. These two characteristics are somewhat more descriptive of our women students than our men.

Most SNC seniors (97% of men respondents, 99% of women) report they *study with other students*, with about equal numbers of both sexes indicating they do so “occasionally” or “frequently.” The difference in percentages between men and women who insist they do so “not at all” is double (1.4% for women, 2.7% for men), but the total number of such students is quite small (less than 2% of all respondents). Hence, this is a difference that likely has little practical import.

The last two of our academic variables ask Senior Survey respondents to report the “hours per week” they spend in *classes or labs* and in *studying/homework*. A slight majority of both sexes report they spent “16 or more hours per week” in their senior year in *classes or labs*. A slightly higher percentage of women (54%) than men (51%) endorsed the “16 or more hours” response but, again, the practical significance of this difference is unclear.
However, there are sharp differences between the sexes in self-reported hours per week studying/doing homework. Figure 2.1 (men) and Figure 2.2 (women) below should make this visually clear.

**Figure 2.1. Hours spent studying by SNC men.**

![Pie chart showing hours spent studying by men.]

- 21% of men studied 0-5 hours per week.
- 32% studied 6-15 hours per week.
- 47% studied 16 or more hours per week.

**Figure 2.2. Hours spent studying by SNC women.**

![Pie chart showing hours spent studying by women.]

- 28% of women studied 0-5 hours per week.
- 17% studied 6-15 hours per week.
- 55% studied 16 or more hours per week.

The differences between the sexes on this variable are highly significant, both statistically and practically. Men clearly report less time studying than women. Almost 1/3rd of senior men reported they studied less than six hours/week in the past year, almost double the 17% of women making the same report. Conversely, more than half of the senior women report 16 or more hours/week studying. Less than half of the men do—an eight percentage point difference.

If we make the (not unreasonable) assumption that hours per week studied is positively (albeit imperfectly) related to better academic performance, then we have a variable that quite likely helps explain the persistent difference in college GPAs between men and women. We would gain additional support for this assumption if we could show similar findings from high school, since our students enter SNC with the GPA “gender gap” already established.

Using the same group of respondents who completed the 2000-2006 Senior Survey, we checked their self-reported study habits on the Freshman Survey, the entering student
companion to the graduating senior questionnaire. Table 2.3 (self-reported hrs/wk studied in senior year of high school) shows what we found.

Table 2.3. Hours studied in High School, 2000-06 SNC seniors.

<table>
<thead>
<tr>
<th>2000-06 SNC Srs.</th>
<th>Self-reported study hours per week as HS Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>as:</td>
<td>0-5 hrs/wk</td>
</tr>
<tr>
<td>HS Sr Women</td>
<td>46%</td>
</tr>
<tr>
<td>HS Sr Men</td>
<td>59%</td>
</tr>
</tbody>
</table>

The men/women differences in hours studied is highly reliable, statistically, and is most striking in the “0-5 hrs/wk” category, where almost 60% of the men are found. Remember, these are self-reports of SNC graduating seniors when they had just finished their senior year of high school, so the self-reports are “fresh” and not the result of recall distortions four years later.

For comparison purposes, let’s recast the pie chart percentages of SNC senior year hours studied (shown earlier in Figs 2.1 and 2.2) into the same kind of table as Table2.3.

Table 2.4. Hours studied in College, 2000-06 SNC seniors.

<table>
<thead>
<tr>
<th>2000-06 SNC Srs.</th>
<th>Self-reported study hours per week as SNC Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>as:</td>
<td>0-5 hrs/wk</td>
</tr>
<tr>
<td>SNC Sr Women</td>
<td>17%</td>
</tr>
<tr>
<td>SNC Sr Men</td>
<td>32%</td>
</tr>
</tbody>
</table>

The similarities between Tables 2.3 & 2.4 are striking. Note, for example, that the gender difference in percentages in the “0-5 hrs/wk” category are virtually the same: 13 percentages points as high school seniors, 15 percentage points as college seniors. In both tables, there are clearly more men in the lowest study category and more women in the two higher categories. This difference is particularly noticeable in the “16 or > hours/wk” category, where the “gap” favoring women changed from 3 percentage points as high school seniors to 8 percentage points four years later.

It is gratifying to note, however, that both men and women “stepped it up” after going through college. There is a major change in the “16 or > hrs/wk” category, where women jumped 45 percentage points from high school numbers and men followed closely behind, with a 40 percentage point change. This migration from fewer to more study hours reflects a positive response to the more rigorous curricular demands of an SNC education.

Section Summary
In this section we analyzed a number of academically-relevant variables on the Senior Survey for gender differences.

We did not find statistically reliable and/or consequential differences between our SNC senior men and women for the following:

- Work on independent study projects
- Frequency of meeting with faculty outside class
• Discussing course content with peers outside class
• Time studying with other students
• Reported hrs/week in class/labs

We did find statistically-reliable differences (all favoring women) for:

• Enrollment in honors or advanced courses
• Tutored other students
• Reported hrs/week studying/doing homework

Because of its close association with academic achievement, we singled out study hours for more detailed analyses. These analyses showed that, from senior year of high school to senior year of college, a greater proportion of women report spending the most hours studying, while a greater proportion of men place themselves in the fewest hours category.

Relationship of Academic Variables to Academic Achievement (GPA)
We now explore the association between the academic variables we discussed in the previous section of this chapter and academic achievement. As we noted above, even though an academic variable does not show a gender difference, it may still be related to academic achievement (GPA) for one or both sexes.

To determine what relationship, if any, our set of academic variables has to the GPAs of SNC men or women, we again used the 2000-2006 pool of seniors who completed the Senior Survey. This time, however, we employed multiple regression as our primary statistical tool.

Multiple regression (MR) is essentially a technique that determines which of a set of “independent” variables (in this case our list of academic variables discussed in the previous section) have statistically significant relationships with a “dependent” variable (in this case, GPA).

Independent variables with statistically significant relationships with a dependent variable have unique variance that is shared with the dependent variable but not with any of the other variables. Thus they really do make an “independent” contribution.

Further, MR provides information on the relative importance of the statistically reliable independent variables in accounting for variation in values of the dependent variable. Thus MR not only separates the statistical sheep from the goats, but gives us information on the various sizes of the sheep in our flock of variables.

There is one more piece of information multiple regression provides. It lets us know the percentage of all the variation in the dependent variable (DV) that is explained or accounted for by variation in our set of statistically reliable independent variables (IVs). This percentage is useful as a context in which to understand the relative importance of the IVs we discover by conducting a multiple regression. This same percentage also provides information on how much variation in our DV (GPA, in this case) is left unexplained. Sounds a little complicated, so let’s see how it plays out in practice.
Academic Variables and the GPA of SNC Men

We will look at our men first. The following three variables were the only ones from our set of eight that have sufficient unique variance associated with GPA to make an independent contribution to our understanding of GPAs reported by men:

- Enrolled in Honors Courses
- Tutored another Student
- Hrs/wk spend in class/labs

Combined, these three account for about 24% of all the variance in men’s GPAs. Of course, that leaves about 76% of the variation in GPA among males unaccounted for.

At first glance, this result looks anemic. But, as social science research findings go, it is rather typical, if not a little impressive. Together, these three variables explain a sizable proportion (almost a quarter) of the variation in GPA. GPA is a summary number whose simplicity masks the many variables that contribute to its variability. Among factors not in our list of eight from the Senior Survey, consider these likely candidates: IQ, choice of college major, mental health, physical stamina, alcohol or other drug consumption, drive to achieve academically, time management skills, motivation for attending college—the list could go on.

Our three variables “make sense.” Being in honors classes almost by definition means one has a high GPA. Tutoring is typically done by students who have “done well” in classes. And one might surmise that brighter students might take course overloads, have double majors, etc—all of which add to one’s course load.

There is a surprising omission, though. Hours per week studying is not in the list above. It didn’t “make the cut.” Simply put, knowing how many hours male students report they study per week doesn’t predict their GPA as well as the three variables above. This finding defies common sense and is counterintuitive, particularly when there is an apparent association between hours studied/week and the “gender gap” in GPA (see earlier section, above).

A partial explanation for the absence of study hours lies in the nature of multiple regression. This technique takes a basket of IVs and sorts them out in order, beginning with variables that predict the most variance in the DV and then continuing through the basket until all unique contributions statistically different from zero have been accounted for. In this approach, order matters.

It turns out that hours studied per week is clearly and reliably associated with GPA—for both men and women in our study. However, at least for men, when this variable has to compete with the others in our basket, it doesn’t make enough of a unique contribution to be statistically significant. In this sense, knowing about hours studied isn’t as informative as knowing about the three variables above. It’s not that hours studied is irrelevant or unimportant, just that we have some other variables that are, statistically-speaking, more relevant and important—at least when trying to understand factors associated with male GPAs.
Despite the lack of a unique association with men’s GPA, it is reasonable to include hours/wk studying in our understanding of GPA for SNC men. One can argue that the other three variables above are more likely to be either mere associates of GPA or, possibly, effects of it. Hours/wk studying, on the other hand, is plausibly more of a contributing cause of variation in GPA rather than an effect. Even if a high GPA is rewarding enough to encourage enough study hours to maintain it (making study an effect), the GPA would not likely be high were it not for the hours/wk studying which preceded it. (making study a cause).

The pie chart below shows the relative contributions of each of the three academic variables to the statistically reliable prediction of GPA for men. Note that tutoring and being in honors courses make the largest contributions (about 75% of the total). The hours spent in classes variable contributes the remaining 25%. (The percentages are derived from the standardized beta weights obtained in the multiple regression.)

**Figure 2.3. Three Contributors to GPA of SNC men.**

![Pie chart showing relative contributions of three significant variables associated with College GPA: Males]

**Academic Variables and the GPA of SNC Women**

We explored the same academic variables using the identical statistical technique in our study of women’s GPAs. Two academic variables appeared again—Enrolled in Honors or Advanced Courses and Tutored another Student. But Hours/week in Classes/Labs was not predictive for women. Hours per week Studying replaced it in our predictive equation.

A new variable appeared as well: Frequency of Studying with other Students. However, the relationship between the amount of time spent studying with peers and one’s GPA is negative—the more women study with others, the lower the reported GPA.

We cross-tabbed frequency of studying with other students (“not at all, “occasionally,” and “frequently” are the response options to this question on the Senior Survey) with self-reported GPAs to better understand the relationship between these two variables. Table 2.5 below highlights some key findings from this analysis. It shows the percentage of students with self-reported “A” and “B” averages in each “time studying” response category.
Table 2.5. Time spent studying with other students and grades (women).

<table>
<thead>
<tr>
<th>Studied w/ others:</th>
<th>Not at All</th>
<th>Occasionally</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>“A” average GPA</td>
<td>3%</td>
<td>57%</td>
<td>40%</td>
</tr>
<tr>
<td>“B” average GPA</td>
<td>0%</td>
<td>39%</td>
<td>61%</td>
</tr>
</tbody>
</table>

The percentage differences between “A” and “B” women are statistically reliable. They point toward a conclusion that “frequent” study with peers is associated with lower GPAs. That is not because “frequent” students study less. We cross-tabbed frequency of study with others with reported hours per week studying. Thirty-one percent of women students who frequently study with others also report studying sixteen or more hours per week. That compares with only 26% of “occasional” students. More likely, peers may serve as ‘distracters,” reducing the actual time devoted to study on one’s courses.

As we did with first year men, Figure 2.4 provides the relative contributions made by the statistically-reliable variables from our multiple regression analysis for women.

Figure 2.4. Contributors to GPA of SNC women.

Amount Contributed to Total Variance for College GPA: Females

Two variables (tutored and enrolled in honors) are identical for men and women. For both sexes, these two variables account for more than 60% of the variance in GPA explained by our academic variable set, with the tutored variable alone accounting for 39% of the explained variance. The contribution made by tutoring is the most important for men and women. Although one needs a relatively high GPA to become a (formal) tutor, it is possible that the act of tutoring itself may serve as a rewarding stimulus to keep learning.

Overall, it appears that the sexes are similar, at least with regard to academic variables associated with their GPAs at St. Norbert. But there are a few surprises flowing from our analyses. For men, the relative unimportance of hours studied per week is unexpected. For women, the negative association between frequency of studying with other students
and GPA is surprising. Frequent studying with peers is the primary risk here, perhaps because actual time devoted to one’s own learning is diminished by time spent interacting with colleagues.

**Relationship of Self-Perceptions to Academic Achievement (GPA)**

We discussed self-perceptions in the chapter summarizing characteristics of St. Norbert students at matriculation. There we noted that self-perceptions can be of interest in their own right. But we went on to say the value of such perceptions increases if it can be shown they have external correlates or consequences. In this section we explore the association between selected self-ratings and GPA. We chose self-perceptions that might reasonably be expected to be linked to academic achievement, viz.,

- Academic Ability
- Writing Ability
- Mathematical Ability
- Intellectual Self-Confidence
- Drive to Achieve

Note that the first three call for self-assessment of abilities arguably essential to achievement in academic courses, one global (“academic ability”) and two more focused (“writing” and “mathematical” ability). The last two variables are attempts to tap motivation (“drive to achieve”) and the expectation of success when facing academic challenges (“intellectual self-confidence”).

We list the variables above in our hypothesized order of importance, that is, we expect academic ability to be most closely associated with GPA, and drive to achieve to be the least. Academic ability is, almost by definition, relevant to academic achievement. The drive to achieve, on the other hand, can be directed toward any of a number of personal goals (e.g., become an elected leader of a student group, excel in athletics, and so on) and need not directly target GPA.

Further, it is possible to work quite hard on doing one’s best in courses but obtain only so-so outcomes because of other factors (limited time, being burdened by other life duties, modest intellectual resources). This is an additional reason high self-ratings on drive to achieve need not translate into correspondingly high GPAs.

As is true of the other variables in this chapter, women and men may differ on the self-perceptions themselves and/or on the strength of the relationships between the self-assessments and academic achievement. We begin with an exploration of differences in self-ratings.

The self-ratings reported below are from the our students when they were college seniors, not the ratings on the same questionnaire items they made just before entering St. Norbert as s. Recall that the items ask respondents to compare themselves to “other persons my age.” Thus, although the first year and senior items are identical in content, the comparison group has shifted from high school age senior peers to college age senior peers.
Gender Differences in Self-Perceptions and Academic Achievement

We summarize our comparisons of senior men and women in Table 2.6 below. Roughly 75% of both men and women rate themselves as either “above average” or “in top 10%” on the majority of self-rating items on the first year survey and on the senior survey (mathematical ability is the one exception from our list, above). To better distinguish possible differences between the sexes, we show only the percent of each gender placing themselves in “the top 10%” when compared with “others my age.”

Table 2.6. Percent of seniors rating selves in top 10%.

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>Women</td>
<td>19%*</td>
<td>13%</td>
<td>5%*</td>
<td>11%*</td>
<td>30%</td>
</tr>
<tr>
<td>Men</td>
<td>25%*</td>
<td>15%</td>
<td>10%*</td>
<td>29%*</td>
<td>33%</td>
</tr>
</tbody>
</table>

*(statistically-reliable difference)

There are statistically-reliable gender differences favoring senior men for self-rated Academic Ability, Mathematical Ability and Intellectual Self-Confidence. Were these differences present at the beginning of our students’ education at St. Norbert? Table 2.7 below presents findings from these same seniors when they were entering students.

Table 2.7. Top 10% in ability ratings of seniors when 1st Year Students.

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</thead>
<tbody>
<tr>
<td>Women</td>
<td>24%</td>
<td>13%</td>
<td>9%*</td>
<td>12%*</td>
<td>33%</td>
</tr>
<tr>
<td>Men</td>
<td>23%</td>
<td>12%</td>
<td>17%*</td>
<td>21%*</td>
<td>34%</td>
</tr>
</tbody>
</table>

*(statistically-reliable difference)

The “gender gap” in self-ratings is similar for our students as first year students and as seniors. More men rate themselves in the top 10% of peers than do women for both self-rated mathematical ability and for intellectual self-confidence. The only difference is that academic ability also shows a “gap” favoring senior men (Table 2.6), a gap not present when these same students were in their first year (Table 2.7).

The widening difference between men and women in academic ability is the result of a drop in the percentage of women rating themselves in the top 10% of their peers and a slight increase for men. A similar—but larger—increase occurred in the percentage of male ratings on intellectual self-confidence. This percentage rose from 21% (entering students) to 29% as seniors. As a result, the nine percentage point difference between first year men and women doubled to an eighteen percentage point difference.

Remember, these ratings are coming from the same group on both occasions, so we are ‘comparing oranges to oranges’ here. It appears that men gain in intellectual self-confidence over four years, while women’s perception of their academic ability goes down. Note, too, that the percentage of both men and women rating themselves in the top 10% on mathematical ability drops from first year to senior year.

It is unlikely these findings are anomalous or idiosyncratic. A quick check of a recent (2008) senior cohort provides an independent replication of the results from our pooled data file of 2000-2006 seniors. The differences observed are similar—if even more dramatic—than those obtained from the aggregated data from seven senior cohorts in
Table 2.6, as Table 2.8, below, shows. Once again, the percentage of SNC seniors rating themselves in “the top 10%” when compared with age peers is shown

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>18%*</td>
<td>13%*</td>
<td>4%*</td>
<td>14%*</td>
<td>34%</td>
</tr>
<tr>
<td>Men</td>
<td>31%*</td>
<td>29%*</td>
<td>20%*</td>
<td>26%*</td>
<td>35%</td>
</tr>
</tbody>
</table>

*(statistically-reliable difference)

For the 2008 seniors, only the Drive to Achieve shows no statistically reliable difference between men and women.

The differences in self-perceptions are interesting, perhaps even a little disturbing, depending on the interpretation one gives them. But it is not at all clear what they mean, or what practical implications for the education of SNC students follow from these results. One first step toward a better understanding of the gender differences associated with these self-perceptions is to explore the relationship between them and a direct (albeit imperfect) measure of real-world academic achievement--college GPA.

**Relationship of Self-Perceptions to College GPA**

Table 2.9 below shows the (Spearman) correlation coefficient of each self-rating with self-rated college GPA. All coefficients are statistically different from a correlation of zero (which is indicative of no reliable relationship between self-rated abilities and GPA).

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>0.58</td>
<td>0.22</td>
<td>0.23</td>
<td>0.24</td>
<td>0.23</td>
</tr>
<tr>
<td>Men</td>
<td>0.59</td>
<td>0.24</td>
<td>0.32</td>
<td>0.23</td>
<td>0.30</td>
</tr>
</tbody>
</table>

It is apparent that self-rated academic ability has, by far, the strongest relationship with GPA, a finding true for both men and women. For senior women, the remaining four correlations are very close to each other. For men, it appears the four remaining self-perceptions can be grouped into two small clusters based on their correlation size, with Writing and Intellectual Self-Confidence in one and Mathematics and Drive to Achieve in the other.

When senior self-perception variables are viewed in this way, with all of them having a statistically-reliable association with GPA, it is easy to conclude that all must, correspondingly, be important to the understanding and prediction of self-rated GPA. This conclusion does not take into account the extent to which the association between any one of the five variables and GPA may be the result of that variable’s relationship with one or more of the remaining four. That is, it may not be the variance that is unique to a variable that predicts GPA, but rather its shared variance with one or more of the other variables. Once this shared variance is statistically-controlled, the association between a particular self-perception and GPA may disappear.
Multiple regression is the statistical technique that permits us to find out which of our five variables make an independent contribution to the prediction of GPA. We conducted separate multiple regressions for men and women to test the assumption that all of our five academic self-perceptions are uniquely associated with GPA, as suggested by the correlations in Table 2.9.

For senior women, only self-rated Academic Ability makes an independent contribution to the prediction of self-reported GPA, accounting for about 20% of the variation in GPA. The remaining four self-ratings are positively correlated with GPA primarily because of the variance they share with Academic Ability. Once that variance is statistically-controlled, their unique contributions to explaining variation in GPA are not reliably different from zero. However, adding the unique variance of Academic Ability to the variance it shares in common with the other four brings the total variance explained to about 33%.

For senior men, on the other hand, all five self-ratings make a statistically-reliable contribution to the prediction of GPA, together accounting for about 39% of its variance. However, once again, self-rated Academic Ability is—by far—the most important variable. By itself, the unique variance of Academic Ability accounts for about half of the 39% of variance in GPA explained by all of the five self-ratings. Thus, the unique contribution of self-rated Academic Ability is virtually identical for both sexes.

The important conclusion is that self-rated Academic Ability is, by far, the most important correlate of self-reported GPA for both men and women. For each sex, this one variable is associated with about 20% of the variation in GPA. (In addition, for men, the other four self-ratings we have considered also make unique contributions, but these contributions are modest.)

It would be risky to conclude that self-perceived academic ability is a causal factor for GPA. The more prudent hypothesis is that the two are clearly related to each other, probably in a kind of circular feedback loop: I know I have high academic ability, in part, because my GPA is high; my GPA is high because, in part, I have high academic ability.

We’ve singled out self-rated Academic Ability as the most important self-perception associated with academic achievement because of the evidence provided above. This same evidence suggests its explanatory power relative to GPA is essentially the same for both men and women. However, we also know from data in Tables 2.6 & 2.8, above, that SNC men and women do not have similar proportions of individuals in the response option categories for this variable. As Table 2.6 shows, for example, 25% of men in our combined 2000-2006 senior cohorts rate themselves in the top 10% on Academic Ability when comparing themselves to “other persons my age,” while only 19% of women do. Thus it would be a mistake to conclude that similar explanatory power vis’ a vis’ the prediction of GPA means similar percentages of men and women must fall into the available rating categories for the self-perceptions on our Senior Survey (these categories are: lowest 10%, below average, average, above average, top 10%).

Let’s begin with a complete response options table for the same senior men and women shown in Table 2.6. This time we show only self-rated Academic Ability in Table 2.10.
Table 2.10. Self-rated academic ability of SNC senior women and men.

<table>
<thead>
<tr>
<th>Rating:</th>
<th>Lowest 10%</th>
<th>Below Ave.</th>
<th>Average</th>
<th>Above Ave.</th>
<th>Top 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>0%</td>
<td>1%</td>
<td>24%</td>
<td>56%</td>
<td>19%</td>
</tr>
<tr>
<td>Men</td>
<td>0%</td>
<td>&lt;1%</td>
<td>23%</td>
<td>52%</td>
<td>25%</td>
</tr>
</tbody>
</table>

The differences between men and women on self-rated Academic Ability appear mostly in the above average and top 10% categories. More women rate themselves above average and more men rate themselves in the top 10%.

Although more men rate themselves in the top 10% on academic ability, we know that the average GPA of women is higher than men (e.g., in our 2000-2006 senior data file, 21% of women report an average GPA of “A,” compared to 10% of men). So what do we find when we cross tabulate self-rated academic ability with GPA, limiting our selection to seniors rating themselves in the top 10%—a group that should be representative of our best students? Table 2.11 shows the result.

Table 2.11. Self-reported grades of “top 10%” students.

<table>
<thead>
<tr>
<th>Grade</th>
<th>C or &lt;</th>
<th>B or C+</th>
<th>B</th>
<th>A- or B+</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>0%</td>
<td>0%</td>
<td>6%</td>
<td>27%</td>
<td>67%</td>
</tr>
<tr>
<td>Men</td>
<td>0%</td>
<td>3%</td>
<td>14%</td>
<td>44%</td>
<td>39%</td>
</tr>
</tbody>
</table>

The results are unexpected. Two-thirds of women rating themselves in the top 10% report a GPA of “A,” but only 39% of men with this rating do. This is almost a 30 percentage point difference.

In Table 2.12 we recast the information in our crosstab in a different way to show the self-rated Academic Ability of all those men and women who reported an “A” average:

Table 2.12. Academic ability ratings of “A” students.

<table>
<thead>
<tr>
<th>Rating:</th>
<th>Lowest 10%</th>
<th>Below Ave.</th>
<th>Average</th>
<th>Above Ave.</th>
<th>Top 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>0%</td>
<td>0%</td>
<td>3%</td>
<td>40%</td>
<td>57%</td>
</tr>
<tr>
<td>Men</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>17%</td>
<td>83%</td>
</tr>
</tbody>
</table>

This table shows that men in the top 10% account for four out of five “A” GPAs obtained by all men. The comparable data for women is less than three out of five. Note also that a woman who rates her Academic Ability “above average” has a 40% chance of reporting an “A” GPA, more than double the likelihood an “above average” male will make that report.

We don’t know whether the women are being overly modest in their self-ratings, the men are being overly generous in theirs, or some other factor accounts for this “gender gap.” But it is clear that the sex of the rater has a significant impact on ratings of Academic Ability and on the relationship between this rating and actual achievement as measured by GPA.

Summary of Key Findings

The information in this chapter is complex, perhaps offering too much detail for many readers to “keep straight.” This summary is intended to distill key chapter findings for ready reference.
Key Finding 1: Women enter St. Norbert with average HSGPAs about 0.30 higher than men. This “GPA gap” of about 0.30 continues through to graduation.

Key Finding 2: Women enter SNC reporting more hours per week spent in studying than men. This “study gap” continues through to graduation.

Key Finding 3: Tutoring another student is a behavior that is strongly associated with SNC GPA for both men and women. It is a plausible hypothesis that the act of teaching another student offers additional encouragement to achieve.

Key Finding 4: Self-rated academic ability has the most robust association of all self-ratings with SNC GPA for both women and men.

Key Finding 5: Women and men enter SNC with similar self-ratings of academic ability, but the percentage of women rating themselves in “top 10% when compared with others my age” drops from freshman to senior year, while that of men rises slightly. The result is an approximate six percentage point difference favoring men by senior year. The reasons for this “Ability ratings gap” are unknown.

Key Finding 6: About two out of three senior women rating their academic ability in the top ten percent report cumulative GPAs of “A.” Only two of five men with the same rating report a cumulative GPA of “A.” The reasons for this “A gap” are unknown. One hypothesis is that women and men may be using different criteria and/or comparison groups (“other persons my age”) in their self-ratings of academic ability.

Key Finding 7: More than four of five senior men reporting a cumulative GPA of “A” also rate themselves in the “top ten percent” on academic ability. Only about three of five women with GPAs of “A” rate themselves in the “top ten percent,” with most of the remainder (40% of all women with “A” GPAs) giving themselves an “above average” rating. Again, reason(s) for this “ability ratings gap” have yet to be determined.

Endnote: Self-reported GPA: How accurate?

In this chapter our analyses and comparisons often rely on the self-reported GPAs of our seniors. This is convenient, since both our correlates and self-reported GPA are items on the Senior Survey. Thus they are both in the same data file, and do not require merges with other, external, data files.

Although convenient, does our methodology sacrifice accuracy by using self-reports rather than actual (official SNC) GPAs? We conducted a small research project to find out. We merged the 2008 Senior Survey file with academic data on our 2008 senior respondents. Our academic information (including cumulative GPAs) was obtained from the College’s official database.

Our first step was to correlate SNC official cumulative GPA with self-reported GPA. The latter is not continuous, as is SNC GPA. Rather, it provides respondents with eight alternatives from which to select, as follows:

1 = D; 2 = C; 3 = C+; 4 = B-; 5 = B; 6 = B+; 7 = A-; 8 = A or A+

Respondents are not offered any instruction on how to translate the letter grade options into corresponding GPA ranges. They must make a best judgment. In the tables in this chapter we reduced the Survey’s eight point scale to five (see Table 2.11, above). We did so to facilitate gender comparisons in our tables and because we had some concerns that the eight point scale might be misleadingly “over-precise,” given the lack of instruction to respondents on how to translate letter grades into GPAs. Collapsing the scale to five
points sacrifices some possibly useful information, but also reduces the likelihood of over- or underestimates as students translate their recalled SNC GPAs into letter equivalents.

The Spearman correlation between actual SNC GPA and the full Survey scale is 0.90. The same correlation with our modified Survey Scale (with its even more limited range of possible scores) is 0.84. These correlations are high enough in our view to conclude that self-reported GPA stated in letter-grade form is a satisfactory substitute for actual SNC GPAs stated as a standard two decimal place number.

We took one more step, however. We made our own translated GPA range-to-single-letter-grade scale and then compared our respondents’ actual cumulative GPAs (from the end of 7th semester) with their letter grade responses on the Senior Survey. Inspecting a table made from these two variables allows us to see if there was a systematic bias in student “translations.” We were particularly interested to see if students would “give myself the benefit of the doubt” by providing a letter grade equivalent higher than their actual GPA warranted.

The scale we used is shown below:

- 2.24 or ≤ = C or <
- 2.25 – 2.74 = C+ to B-
- 2.75 – 3.24 = B;
- 3.25 – 3.74 = B+ to A-
- 3.75 or > = A

Keeping in mind the fact our student respondents had no such scale available to them when they made their letter grade ratings, here is what we found:

For both men and women in our 2008 senior sample, one-third of self-reported grades are ‘out of range.’ Twenty-one women are in this category. Ten of them provided a letter grade that fell below actual SNC GPA (on our scale), while eleven provided a letter grade higher than warranted by our scale ranges. Data from this sample of senior women do not suggest a systematic bias “upward.”

Our findings for the senior men in our sample are less clear, given the small number of errors available for analysis. Of the seven out of range men, five provided a letter grade higher than warranted by our scale ranges, while two were under. Data from this sample of senior men are simply too sparse to conclude an “upward” bias in reported grades is present, leading to a Scotch verdict of “not proven.”

With very few exceptions, student raters out of range were “off” by one (adjacent) GPA category (e.g., a rater with a 3.27 GPA provided a self-rating of “B” rather than “B+”). We found only two out of range ratings (from a total of 28) displaced by two GPA range categories—both providing a higher letter grade rating than warranted by actual GPA.

Based on the analyses above, our conclusion is that self-reported letter grades are a reasonable proxy for actual GPAs. However, for our purposes, it is unfortunate the Freshman and Senior Surveys continue to provide respondents with letter grade response options rather than GPA ranges. It is our impression that college students may talk of letter grades when discussing achievement in individual courses, but they “think” GPA numbers when asked about overall academic achievement (cumulative GPA)—the question asked of them on these two Surveys.
Fulfilling the Mission

In various recent iterations of its Mission Statement, St. Norbert has explicitly included learning outcomes for its students. These outcomes flow from the three fundamental dimensions of the College’s identity: Catholic, Norbertine, and liberal arts.

With the initiation of the College’s annual Current Student Survey in the early 1990s, student respondents each year have been asked, “To what extent has the College helped you with...[outcome].”

The form of this item dates back to the first Current Student Survey, some sixteen years ago, and obviously focuses on the “teaching” side of the “teaching-learning” process. In its early editions, the Current Student Survey was intended as an opportunity for students to provide feedback to the College about how well it was doing, and this item stem is consistent with that emphasis.

To permit year-to-year comparisons, this form of the question regarding student learning outcomes has been retained in all subsequent editions of the Current Student Survey. Although not as direct as a version such as, “Compared with when you first came to SNC, how much improvement has there been in...[outcome],” the question has provided meaningful findings regarding student self-perceptions of Mission-derived learning outcomes (an entire OIE monograph has been devoted to an analysis of these data). Further, it is likely that there would be a significant relationship between a self-report that the College helped “a great deal,” say, and an associated self-report of much improvement in the outcome in question.

The current St. Norbert Mission Statement (available in its entirety at www.snc.edu) continues the practice of stating student learning outcomes associated with the Catholic, Norbertine, and liberal arts identity of the College. The relevant quotation follows:

*Our three core traditions promote student learning outcomes that include skill development in critical and analytical thought, quantification, synthesis, problem solving and communication. Our students learn to apply these skills as responsible citizens of a diverse, interdependent and changing world. In all aspects of campus life, students are encouraged to identify, test and strengthen their moral convictions; act with personal integrity; develop meaningful personal goals; and build relationships based on mutual respect.*

We have provided information about some of the “skill” learning outcomes in the Satisfaction chapter (e.g., problem-solving, communication, analytical thought, synthesis, quantification), but not about what might be described as “character” outcomes, such as acting with personal integrity, building relationships based on mutual respect, and so on.

**Findings from the Current Student Survey**

This chapter will provide information about all the outcomes above, with a focus on findings from the Current Student Survey. Unlike the Senior Survey, which captures the culminating perceptions of SNC students about to graduate, the Current Student Survey allows us to see the perceptions of each class (first year through fourth), not just seniors.
Even more helpful, it is possible to “track” a particular student cohort as it moves year to year from entrance to St. Norbert to graduation. This provides us with opportunities for an approximate longitudinal analysis of change, not just the cross-sectional picture provided by a single year snapshot of each class year.

It should be noted that our longitudinal approach is not “pure.” That is, it does not follow the same set of individual first year students through their four years at SNC. The Current Student Survey is not mandated, but voluntary. Thus, in any given year, individuals who complete it may not have done so the previous year, or may not do so the next.

Given this limitation, our longitudinal approach is to follow an entering “cohort.” Each year, some members of this cohort complete the Survey and, thereby, become that year’s “spokespersons” for the cohort as a whole. Although imperfect and subject to all the reservations associated with the representativeness of non-random volunteer samples, our approach provides a beginning to the complex and never-completed task of assessing some of the most important learning outcomes—those which flow from the core identity and mission of this institution.

In the analyses reported below, we will look for consistencies in findings obtained from cross-sectional and longitudinal Current Student Survey data, as well as data from the Senior Survey. These consistencies contribute indirect support to the validity of our findings as a whole and mitigate the weaknesses associated with non-random samples.

We pooled the responses to Mission-related items from the 2005—2008 Current Student Survey, the most recent Surveys available. Pooling not only increased our sample size and hopefully reduced year-to-year sampling errors, it also allowed us to follow the 2005 entering freshman cohort through the senior year in 2008. The complete data file provides a large cross-sectional sample of over 3200 respondents (33% men and 67% women). Table 3.1 below shows the percentages of men and women respondents for each class year in our cross-sectional sample (total number of respondents = 3262).

<table>
<thead>
<tr>
<th>Year: &gt;&gt;</th>
<th>Fr.</th>
<th>So.</th>
<th>Jr.</th>
<th>Sr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>66%</td>
<td>67%</td>
<td>67%</td>
<td>68%</td>
</tr>
<tr>
<td>Men</td>
<td>34%</td>
<td>33%</td>
<td>33%</td>
<td>32%</td>
</tr>
<tr>
<td>Number</td>
<td>1205</td>
<td>787</td>
<td>710</td>
<td>560</td>
</tr>
</tbody>
</table>

The consistency of the gender ratio from one class year to the next (very close to one-third me and two-thirds women) makes our findings below less ambiguous, since there is no sex-by-class-year interaction. Such an interaction, if present, would complicate our understanding of either gender differences or class year differences, since each difference could be influenced to an unknown degree by the other variable.

The expectation is that—if the College is fulfilling its Mission—there should be increasing percentages of respondents from freshman to senior year who report the College helped them “to a great extent” in the achievement of the Mission-related learning outcomes listed above. Table 3.2 below summarizes results from the cross-sectional sample. The first four outcomes listed are cognitive in nature; the last six are affective. Only outcomes contained in each of the Survey years 2005 through 2008 are shown.
Table 3.2. Percent respondents reporting college helped to a “great extent.”

<table>
<thead>
<tr>
<th>Outcome:</th>
<th>First Year</th>
<th>Sophomores</th>
<th>Juniors</th>
<th>Seniors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking</td>
<td>41%</td>
<td>49%</td>
<td>52%</td>
<td>56%</td>
</tr>
<tr>
<td>Synthesis</td>
<td>32%</td>
<td>39%</td>
<td>43%</td>
<td>50%</td>
</tr>
<tr>
<td>Writing</td>
<td>33%</td>
<td>40%</td>
<td>42%</td>
<td>45%</td>
</tr>
<tr>
<td>Speaking</td>
<td>28%</td>
<td>34%</td>
<td>39%</td>
<td>43%</td>
</tr>
<tr>
<td>Personal Goals</td>
<td>41%</td>
<td>46%</td>
<td>47%</td>
<td>47%</td>
</tr>
<tr>
<td>Relationships</td>
<td>42%</td>
<td>47%</td>
<td>51%</td>
<td>52%</td>
</tr>
<tr>
<td>Leadership</td>
<td>32%</td>
<td>38%</td>
<td>42%</td>
<td>44%</td>
</tr>
<tr>
<td>Integrity</td>
<td>38%</td>
<td>42%</td>
<td>43%</td>
<td>45%</td>
</tr>
<tr>
<td>Moral Convictions</td>
<td>25%</td>
<td>32%</td>
<td>33%</td>
<td>34%</td>
</tr>
<tr>
<td>Spiritual Growth</td>
<td>27%</td>
<td>28%</td>
<td>28%</td>
<td>27%</td>
</tr>
</tbody>
</table>

*Table 3.2 is rather “data-dense, making it challenging to read. However, before we present the findings from *Table 3.2* in graphic form for easier viewing, take quick note of several points of information from it.*

First, the general findings from *Table 3.2* are consistent with the expectation that percentages of “great extent” responses should increase from freshman to senior year. The maximum increase (eighteen percentage points) occurs for *Synthesis*. *Critical Thinking* and *Speaking* show a fifteen percentage point increase. *Spiritual Growth*, however, is essentially “flat.”

Second, the “great extent” responses for first year student outcomes range from 27% to 42%, with an average of 34%. The range for seniors is 27% to 56%, with an average of 44%.

Third, the greatest change or “growth” generally occurs between the first- and sophomore years. The least change reported typically occurs between junior and senior years.

The *Current Student Survey* is administered in the fall semester, during the advisement period for second semester courses (early- to mid-November). At first glance, it is surprising that, for example, 41% of first year students report the College has helped them “to a great extent” in the approximately ten weeks of classes since their matriculation. How is this possible?

One suggestion is that respondents approach the outcome items as relativists, comparing their perceived skill levels at *Survey* completion time with recall of the same skill levels before they began their education at St. Norbert. With no clear idea of how much improvement is possible in the future (“Where will I be as a senior”?), first year students in particular may use their first ten weeks of experience meeting the academic demands and standards of college-level courses as their basis for judgment.

With each succeeding class year, as the “outcome cup” becomes more full relatively speaking, perceived increments in growth become smaller. In addition, we also hypothesize that the (typically) modest changes between junior and senior year may reflect to some degree a shift from retrospective perception to a more critical future-
oriented judgment regarding how much one has grown vis a’ vis the demands of the larger worlds of career and adult responsibilities.

The relativist hypothesis offers a possible explanation why some learning outcomes (e.g., *Spiritual Growth*) begin low for first year students and show little change through the senior year. A first year student can enter the College unsure of her or his level of skill for *Synthesizing Knowledge*, say, and simultaneously judge that she or he has pretty much “maxed out” potential for further growth in spirituality by the end of one’s high school career.

This relativist hypothesis is not offered as a defense for what the numbers in *Table 3.2* might suggest are some relative insufficiencies on the part of the College. Rather, the hypothesis suggests a potential explanatory variable that requires further exploration in our ongoing assessment research of the College’s Mission-related learning outcomes.

*Figures 3.1 & 3.2* below present the percentages from our cross-sectional sample shown in *Table 3. 2* in a more attractive viewing format. The four cognitive outcomes are shown in *Figure 3.1*, followed by the six affective learning outcomes in *Figure 3.2*.

The general upward trend from freshman to senior year is most apparent in *Figure 3.1*, where the cognitive outcomes are shown. The affective outcomes in *Figure 3. 2* show more varied trends, with the slope of lines for *Personal Goals* and *Leadership* most similar to their cognitive cousins in *Figure 3.1*. *Spiritual Growth* is essentially flat over the four class years from our cross-sectional sample.

The slopes for the cognitive outcomes trend lines shown in *Figure 3.1* appear generally linear in nature, suggesting similar rates of growth from one class year to the next. The *affective* outcomes shown in *Figure 3.2* do not follow that pattern. Rather the “acceleration” in growth after the sophomore year is highly dependent on which affective outcome one is viewing. Thus, *affective* outcomes do not show as much similarity with each other as do their *cognitive* cousins.

*(Figures 3.1 and 3.2 on next page)*
Cross-sectional samples suffer from a weakness when looking at trends over time. They are snapshots, not movies, showing only one moment in time, not several. In this sense, they are surrogates for longitudinal samples, which do track individuals or groups over a given time period.
Cross-sectional surrogates are satisfactory to the extent that the findings they provide are only impacted by the same variables in the same way as would be the case for a comparable longitudinal sample. That means, for example, we have to assume that differences between freshman sampled in 2005 and seniors sampled in that same year would be similar to differences found between 2005 first year students and 2009 seniors.

We mitigate possible problems with cross-sectional surrogates by pooling, or collapsing, several years of entering students through seniors into one large file. And, indeed, the trends shown in Figures 3.1 & 3.2 are very similar to those we found in previous analyses conducted by the OIE, where we followed particular freshman classes through four years of Current Student Survey results.

Our large 2005-2008 Current Student Survey file allowed us to isolate respondents from the entering freshman class of 2005 and track their responses to Mission-related learning outcome items through to the senior year. As we noted earlier, this is not a “standard” longitudinal sample, since identical individuals did not complete the Survey each of the four years. The sample is longitudinal, however, in the sense that it follows a cohort, represented by volunteer respondents each survey year, over time.

The number of respondents from the 2005 entering class to the Current Student Survey for each of the four years was 200, 168, 187, and 169. With the exception of freshman year, where women comprised 72% of respondents, the ratio of women to men was 65%/35%. Table 3.3 shows results that can be compared to those in Table 3.2, above.

<table>
<thead>
<tr>
<th>Outcome:</th>
<th>As First Year</th>
<th>As Sophomores</th>
<th>As Juniors</th>
<th>As Seniors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Thinking</td>
<td>35%</td>
<td>51%</td>
<td>57%</td>
<td>56%</td>
</tr>
<tr>
<td>Synthesis</td>
<td>28%</td>
<td>42%</td>
<td>46%</td>
<td>48%</td>
</tr>
<tr>
<td>Writing</td>
<td>29%</td>
<td>43%</td>
<td>44%</td>
<td>43%</td>
</tr>
<tr>
<td>Speaking</td>
<td>21%</td>
<td>30%</td>
<td>41%</td>
<td>46%</td>
</tr>
<tr>
<td>Personal Goals</td>
<td>35%</td>
<td>50%</td>
<td>52%</td>
<td>47%</td>
</tr>
<tr>
<td>Relationships</td>
<td>39%</td>
<td>48%</td>
<td>52%</td>
<td>54%</td>
</tr>
<tr>
<td>Leadership</td>
<td>23%</td>
<td>39%</td>
<td>42%</td>
<td>42%</td>
</tr>
<tr>
<td>Integrity</td>
<td>30%</td>
<td>40%</td>
<td>49%</td>
<td>49%</td>
</tr>
<tr>
<td>Moral Convictions</td>
<td>23%</td>
<td>30%</td>
<td>37%</td>
<td>36%</td>
</tr>
<tr>
<td>Spiritual Growth</td>
<td>25%</td>
<td>28%</td>
<td>31%</td>
<td>31%</td>
</tr>
</tbody>
</table>

To facilitate comparisons with our cross-sectional sample, we have taken the results from Table 3.3 and, as before, charted the cognitive and affective outcomes separately. Figure 3.3 on the next page shows the results.
Figure 3.3  Percent of 2005 longitudinal sample responding *college helped* cognitive outcomes to a *great extent* by year in school.

All the cognitive outcomes show a rising trend from freshman year. Three of the four trend lines show the steepest slope (greatest change) from freshman to sophomore year, and two of them show a slight decrease from junior to senior year. These two findings (greatest change from freshman to sophomore year, essentially flat or slight decrease junior to senior year) were frequent occurrences in the OIE’s earlier longitudinal analysis of Mission-related learning outcomes (*Assessing Mission Effectiveness at St. Norbert College*, published in 2006).

Results from our single cohort (2005 entering students) longitudinal sample, shown in Figure 3.3, are not identical to those found from the larger cross-sectional sample in Figure 3.1, above. In particular the trend lines in Figure 3.3 are not as linear. For *critical thinking* and *writing*, there is a “leveling off” after the junior year, for example.

Even so, there are clear similarities. *Critical Thinking* is the topmost trend line in both cases, while *Speaking* is the lowest. Trends for *Synthesis* and *Writing* closely parallel each other in both types of samples as well.

These similarities provide support for the hypothesis that students are able to discriminate differences in the degree of support the College provides them on the four cognitive outcomes shown. What about affective outcomes? *Figure 3.4*, on the next page, provides some answers.
A comparison of Figure 3.2 and Figure 3.4 show that Personal Goals and Relationships are topmost in both, with Spiritual Growth and Moral Convictions the two lowest trend lines. The affective outcomes of Leadership and Integrity maintain their intermediate ordering as well. Once again, we believe the similarities between results from the cross-sectional and longitudinal samples offer support for the hypothesis that students are able to discriminate among affective learning outcomes when asked to judge the degree of support the College provides for their development.

**Gender Differences in Mission-related Learning Outcomes**

This extended introduction to student self-reported growth in Mission-related learning outcomes serves as a base from which to explore what gender differences, if any, there may be among the outcomes we have been exploring.

Based on our pooled 2005–2008 Current Student Survey cross-sectional sample and the 2005 freshman cohort longitudinal subsample, we can say that—generally speaking—gender differences for Mission-related learning outcomes are modest when found and frequently become indistinguishable as one moves from freshman to senior year.

Our conclusion is based on the t-tests we conducted for each outcome. The t-statistic is more sensitive to statistically reliable differences between groups than the chi square statistic we typically employ in cross-tabulation. Even so, when we looked at the male/female differences for each class year in our longitudinal sample, the only statistically-reliable differences we found were for mean differences in Speaking for first
year students and for Personal Goals and Relationships for seniors (with women having the higher mean score in every case).

We increased our power to detect reliable differences with the much larger cross-sectional sample. Now all outcomes (with the exception of Synthesis where no significant difference was found) favored freshman women. At the sophomore year, again all outcomes favored women, save for Moral Convictions and Writing (no significant differences).

By the junior year, however, there were few statistically-reliable differences. Only Leadership and Spirituality favored women. For seniors, two different learning outcomes (Relationships and Integrity) had higher mean ratings for women than for men.

The findings above suggest a pattern. In the last third of first semester, freshman year (when the Current Student Survey is administered), women report larger perceived gains in Mission-related learning outcomes than do men. These gains generally hold to the first semester of the sophomore year, but typically shrink to statistical insignificance by the junior and senior years. Based on this four-year sample from the Current Student Survey, there are statistically distinguishable gender differences in the first two years of attendance at St. Norbert, but not the last two.

That said, when these data are charted (below), it is easy to see that—statistically reliable or not—SNC men rather consistently lag behind SNC women for each academic class year—for affective learning outcomes. The charts to follow will show this phenomenon rather clearly.

The cognitive learning outcomes (critical thinking, synthesis, writing, speaking), on the other hand, just as clearly show the “catch-up” pattern of men lagging behind during the freshman and sophomore years, but providing essentially-comparable self-ratings of growth in the junior and senior years.

For easy gender comparison, there is one chart for each of the ten Mission-related outcomes. Each chart shows two trend lines, one for women and one for men. Charts for each of the four cognitive outcomes are shown first as Figures 3.5 to 3.8. followed by the six affective Mission-related learning outcomes (Figures 3.9 to 3.14). A data table, showing the percentage value for each class year data point, forms the base of each chart.

The charts begin on the next page.
Differences between the sexes on the extent to which SNC helped critical thinking skills are never very large for any year-in-college for our pooled 2005-2008 sample. At the junior and senior years women and men are virtually equal.

The trends from freshman to senior year for the cognitive outcome, synthesis, are almost identical to the same trends for critical thinking, above. Once again, at the junior and senior level, the sexes show virtually identical percentages of students reporting the College helped them develop this skill to a great extent, with the largest “gap” between the sexes occurring at the sophomore year.
Figure 3.7. Cognitive Outcome *Writing*: Percent reporting SNC helped *to a great extent*.

The trend lines shown in *Figure 3.7*, above, differ somewhat from those for *critical thinking* and *synthesis*. The pattern for *writing effectively* shows the greatest difference at the freshman level, with reduced differences beginning at the sophomore year. Trend data from our annually-administered *Freshman Survey* from HERI typically indicate that more entering freshman women than men report “above average” writing skills. This difference may be reflected in the eight percentage point difference shown for first year students in *Fig. 3.7*.

Figure 3.8. Cognitive Outcome *Speaking*: Percent reporting SNC helped *to a great extent*.

*Speaking* is the cognitive outcome with a charted pattern most like the *affective* outcomes in *Figures 3.9 to Figure 3.14*, below. Perhaps this is so because College-associated opportunities to build this skill extend beyond classroom presentations to the cocurriculum (e.g., social and academic organizations, student government, residence hall governance and management, etc.). *Critical Thinking, Synthesis*, and *Writing* are likely
(at least in the perception of students) to be skills and abilities emphasized in formal coursework and not transparently the focus of the cocurriculum.

When compared with the cognitive outcomes shown above, all the affective outcomes in Figures 3.9 – 3.14 show more differences between women and men in self-reports of growth supported by the College. Most commonly, this difference is smallest in either the junior or the senior year (but not both, as in the cognitive outcomes above). Figures 3.9 through 3.11 (Personal Goals, Relationships, and Integrity) show this pattern clearly.

**Figure 3.9. Affective Outcome Personal Goals: Percent reporting SNC helped to a great extent.**

In the development of meaningful personal goals, differences between the sexes exist across all four years, with fewer men reporting the College helped them to a great extent. Rather typically, the largest difference occurs for sophomores. It is almost closed at the junior year, but this “closure” is not maintained by our senior samples. Note, too, that “growth” is modest for this goal: there is relatively little change from freshman to senior year (about 5-6 percentage points).

One possible explanation for this modest change across time is that (unlike such outcomes as critical thinking) students typically enter St. Norbert with meaningful personal goals that are satisfactory to them. Thus, there is less likelihood of change, or for the need to have SNC assist in goal clarification. This explanation has not been verified, and is offered here as a possible way to understand the information in Figure 3.9, not a discussion-ending conclusion.
The charted data for the affective outcome of relationships based on mutual trust is very similar in form to personal goals shown in Figure 3.9. Differences between the sexes are greatest for sophomores and smallest for juniors. Unlike the personal goals outcome, however, senior percentages are 9-10 points greater than those for first year students, suggesting more change in the perception that SNC helped growth in this outcome.

Figure 3.11. Affective Outcome Integrity: Percent reporting SNC helped to a great extent.

The affective outcome of act with personal integrity once again shows junior men and women with virtually identical percentages of respondents indicating the College helped their growth in this area to a great extent. The differences between the sexes at the other
three class levels are more pronounced—about seven or eight percentage points, with more women reporting SNC support.

Figures 3.12 & 3.13, Spiritual Growth and Leadership, illustrate the pattern of “closure” by the senior year. The third, Figure 3.14, Moral Convictions, shows a rather consistent difference between women and men in each of the four class years (4-6 percentage points).

Figure 3.12. Affective Outcome Spiritual Growth: Percent reporting SNC helped to a great extent.

The essentially flat lines across classes shown for spiritual growth may have an explanation similar to that for personal goals (Figure 3.9). It is possible a majority of students arrive at St. Norbert comfortable with their level of spiritual development, thereby reducing the need for assistance from their educational experiences at SNC. Again, this explanation, however plausible, is not empirically-verified.

Figure 3.13. Affective Goal Leadership: Percent students reporting SNC helped to a great extent.
Leadership displays gender differences throughout, with more women rating SNC support highly than men across all class year samples. Both sexes, however, show gratifying increases in the percentage of respondents reporting SNC support as one moves from freshman year across the next three academic classes.

Figure 3.14. Affective Outcome Moral Convictions: Percent reporting SNC helped to a great extent.

As was true of leadership, for the affective outcome of identifying, testing, and strengthening moral convictions more women in each class report higher levels of SNC support than their male classmates. The differences hover around five percentage points across the four classes. The slopes of the trend lines for both sexes suggest that most of the changes occur between freshman and sophomore year, followed by a “leveling out” for the last two academic years.

Conclusion: Gender Differences in Achievement of Mission-based Outcomes

Findings from this chapter indicate that SNC senior men and women students report slightly different levels of fulfillment of Mission-related learning outcomes, with men “closing the gap” on cognitive outcomes by the junior year. For affective outcomes, “gender gaps” persist, although they are typically minimized at the junior or the senior year level.

It is worth a reminder that these findings are based on cross-sectional analyses, not longitudinal analyses which track a single entering freshman cohort over four years. The latter approach is the “gold standard” for validating change over time, providing more certainty than cross-sectional analyses (which confound any changes over time with possible differences in entering cohort characteristics).

It is also worth repeating that the results above are based on self-reports that St. Norbert College helped individual student growth “to a great extent.” Although we expect these self-reports of College support to be correlated with direct measures of gains in these Mission-based learning outcomes, they are more likely to supplement such measures rather than replace—or mirror—them. It is, therefore, a leap of uncertain validity to
conclude that, on the basis of these results, women students at SNC actually realize the College’s Mission-based affective learning goals to a greater extent than men. Right now—based on the information above—that is a tenable hypothesis. It is not an incontrovertible conclusion.

Given the numerous factors that can reduce the validity (accuracy) of self-reports, what is needed is more direct evidence of outcome achievement. For cognitive outcomes, such direct evidence (in the form of behavior or performance) is feasible to obtain, albeit laborious to collect and analyze. At present, SNC direct measures of cognitive outcomes are mostly found at the level of academic disciplines and in the General Education Program.

Affective learning outcomes are less amenable to direct performance measurement (what, for example is a valid and sufficient performance measure of acts with personal integrity?). Because of this difficulty, affective outcomes are often evaluated through ratings by persons (e.g., supervisors, close peers, work colleagues) who are in a position to make an informed judgment of the outcome in question.

Developing and implementing more direct measures of SNC’s Mission-based cognitive outcomes is a desirable next step in determining the extent to which the College is fulfilling its Mission. Systematically adding ratings by others to self-ratings of affective outcomes makes good sense as well.
Satisfaction with the St. Norbert Experience and its Components

As we argue in Chapter 9, *Notes on Methodology*, satisfaction with one’s education is an important affective outcome. High overall satisfaction with an academic institution means there is a close correspondence between student needs and the totality of educational experiences offered.

A high degree of satisfaction is desirable for several reasons. First, it is plausible to assume that a satisfied student is motivated to engage the curriculum and extra-curriculum with more zeal than a peer who is dissatisfied with the experiences offered. Second, high overall satisfaction likely means a graduate will be more disposed to support alma mater financially and/or with other positive activities, such as encouraging others to consider attending. Generally speaking, there appears to be no downside to high levels of student satisfaction—as long as the components contributing to overall satisfaction are institutionally-valued.

In this chapter we will explore gender similarities and differences in overall satisfaction with the College and in the components contributing to this overall satisfaction. In the end, we will not have ‘all the answers,’ but we have a richer understanding of this central affective outcome of a St. Norbert education and the elements associated with it.

**Differences in Overall Satisfaction with the St. Norbert Experience**

After four years, who is more satisfied with St. Norbert—women or men? The answer is, *women*. The table below summarizes the responses of our 2000-2006 sample of over 2000 SNC seniors to the *Senior Survey* question, *How satisfied are you with the overall college experience?*

<table>
<thead>
<tr>
<th></th>
<th>2000-06 Seniors</th>
<th>Dissatisfied</th>
<th>Neutral</th>
<th>Satisfied</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Women</strong></td>
<td></td>
<td>1%</td>
<td>9%</td>
<td>55%</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td></td>
<td>3%</td>
<td>11%</td>
<td>58%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Note first that no graduating senior is *Very Dissatisfied* and only a fraction of this group of seniors is *Dissatisfied*. This result is to be expected, although one wonders about the factors that led this very small number of dissatisfied graduates to remain at the College for four years.

Second, the differences in percentages in *Table 4.1* are relatively small, although they are statistically-stable. One can be reasonably assured they are “real”—in the sense that they are very likely *not* the result of chance factors.

It would be desirable (if perhaps impossible) to have all graduates *Very Satisfied* with their educational experiences at St. Norbert, rather than about thirty percent or so. What can we make of the fact that only one-third or less of seniors endorse the *very satisfied* option? One answer is to see how SNC compares with other institutions of higher education who give this survey to their seniors. How typical are these results?
Our comparison information comes from the Higher Education Research Institute (HERI) at UCLA, the sponsor of the Freshman and Senior Surveys. Unfortunately, the Institutional Profiles provided to participating colleges by HERI aggregate satisfied and very satisfied responses together, so we cannot focus only the very satisfied group. Still, Table 4.2, below, is informative. The data in the table are from the most recent (spring, 2008) Senior Survey available for analysis at the time of writing.

<table>
<thead>
<tr>
<th>2008 Seniors</th>
<th>St. Norbert</th>
<th>Catholic Colleges</th>
<th>All Private Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women satisfied</td>
<td>91.5%</td>
<td>85.0%</td>
<td>86.6%</td>
</tr>
<tr>
<td>Men satisfied</td>
<td>85.1%</td>
<td>83.6%</td>
<td>84.8%</td>
</tr>
</tbody>
</table>

St. Norbert senior men are marginally higher in overall satisfaction than their peers at Catholic four year colleges and those at private colleges generally. SNC senior women show what appears to be a larger positive difference between themselves and college peers. (Our aggregated satisfied and very satisfied responses from Table 4.1, by the way, are 89.5% for SNC women and 86.2% for SNC men, also higher than the 2008 Catholic and all Private percentages in Table 4.2.)

Table 4.2 establishes the fact that more senior women attending private colleges report they are satisfied with their education than do senior men. The differences are not large and the practical implications that flow from them are uncertain.

One reason for the cautious conclusion in the preceding paragraph is the issue of response bias. Raters (and ratings) are not only influenced by question content when they respond, but also by internal response sets that reflect general and relatively inflexible biases. For example, some raters rarely use the extremes of any rating scale; others spread their ratings across all options. Another bias is that of level. College students are intimately familiar with this bias, avoiding (if they can) professors who are low levelers (“No one ever gets an “A” in Dr. X’s class”) and seeking those whose average rating (grade) levels are higher.

It is a tenable (if unproven) hypothesis that the consistent, relatively small, differences in ratings of satisfaction shown by senior men and women across colleges are—to an unknown extent—the result of gender differences in level and spread of ratings. For example, one might hypothesize that female raters are generally more generous or positive than male raters when asked to rate their satisfaction with someone—or something—other than themselves (males, by the way, are generally more positive than females on many self-ratings).

It is possible to arrange a controlled experiment to test the “generosity” hypothesis. Indeed, this might have already been done by someone, somewhere, although we are not aware of any such research. In the interim, we believe it is prudent to be conservative in the interpretation of gender differences in overall satisfaction. One can conclude with a great deal of certainty that more college senior women rate their overall satisfaction with college higher than their male peers do. It is less clear that women “really” are more satisfied, although they might be.
Even if we don’t know for sure the extent of “real” differences in overall satisfaction between college men and women, we can still explore whether there are gender differences in the components of such satisfaction for each sex. That is, are the elements which comprise overall satisfaction similar for college men and women?

**The Components of Satisfaction 1: Sub-Satisfactions**

The *Senior Survey* provides respondents the opportunity to express their levels of satisfaction with a variety of elements in the college environment. Examples include contacts with faculty, library, interaction with other students, recreational facilities, and so on.

Generally, ratings of these “sub-satisfactions” roughly track overall satisfaction. High overall satisfaction is associated with higher ratings of the various sub-satisfactions than is low overall satisfaction. But not every element in the college environment has the same relationship (correlation) with overall satisfaction, and—as we found when discussing *Academic Achievement*—some sub-satisfactions are related to overall satisfaction mostly because of their shared variance with other sub-satisfactions. Statistically control for this shared, or common, variance, and the relationship between a particular sub-satisfaction and overall satisfaction may shrink considerably.

We used multiple regression (as we had with *Academic Achievement*) as our statistical control method. This technique allows us to see with sub-satisfactions have a strong enough individual relationship with overall satisfaction to remain statistically-reliable after the variance they share with other sub-satisfactions is controlled. We compared our separate multiple regressions (men, women) to see what they had in common, and how they might differ.

The list of sub-satisfactions in our analyses were as follows:

**Academic Variables: Satisfaction with...**

- General Education Courses
- Science and Math Courses
- Humanities Courses
- Social Science Courses
- Major Courses
- Relevance of Coursework to Life
- Overall Quality of Instruction
- Academic Advising
- Class Size
- Amount of Contact with Faculty
- Library Facilities

**Co-curricular Variables: Satisfaction with...**

- Sense of Community on Campus
- Interaction with other Students
- Student Housing
- Recreational Facilities

Ten of the above variables are statistically-reliable contributors to an explanation of overall satisfaction for women; seven of them are contributors for men. Six of these
variables are common to both sexes. The ten sub-satisfactions together account for about 50% of the variation in overall satisfaction for women. The seven contributors in the men’s multiple regression account for the same percentage (51%) for men.

The table below shows all significant sub-satisfactions, in rank order for most to least important, for women; the male ranks are also shown, but are not in order. Asterisks (***) in a column indicates a particular sub-satisfaction was not a contributor for that sex. The rank order is based on the percentage of unique variance each sub-satisfaction contributes to the total variance of overall satisfaction.

### Table 4.3. Subcomponents of overall satisfaction.

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>Overall Satisfaction Component:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
</tr>
<tr>
<td>1</td>
<td>Sense of Community on Campus</td>
</tr>
<tr>
<td>2</td>
<td>Overall Quality of Instruction</td>
</tr>
<tr>
<td>3</td>
<td>Interaction with Other Students</td>
</tr>
<tr>
<td>4</td>
<td>Courses in Major Field</td>
</tr>
<tr>
<td>5</td>
<td>Student Housing</td>
</tr>
<tr>
<td>6</td>
<td>Class Size</td>
</tr>
<tr>
<td>7</td>
<td>General Education Courses</td>
</tr>
<tr>
<td>8</td>
<td>Academic Advising</td>
</tr>
<tr>
<td>9</td>
<td>Social Science Courses</td>
</tr>
<tr>
<td>9.5</td>
<td>Relevance of Coursework to Life</td>
</tr>
<tr>
<td>***</td>
<td>Recreational Facilities</td>
</tr>
</tbody>
</table>

### Comments:

*Sense of Community* is the most important sub-satisfaction for men and women. Five other variables are common to both sexes, but their order of importance varies. Satisfaction with the *Overall Quality of Instruction*, for example, holds the second rank for women, but is sixth for men.

Satisfaction with *Class Size, Academic Advising, and Relevance of Coursework to Life* were significant contributors to overall satisfaction for women, but not for men. Satisfaction with *Recreational Facilities* was the final contributing sub-satisfaction for men, but was not important for women.

Rank ordering variables can be somewhat misleading, since this procedure gives no indication if the “gap” between variables ranked first and second, say, is the same as the “gap” between those ranked fourth and fifth. Indeed, that can be one purpose of ranking—to draw attention to the relative order of importance rather than focusing on the quantitative difference between adjacent variables. Just don’t assume that the difference between second and third place is identical to that between fourth and fifth. In this case, however, we do have information from our analysis that permits a closer look at how the sub-satisfactions we are discussing relate to each other and to overall satisfaction.

The next table shows the percentage of total (common + unique) variance shared between each sub-satisfaction and overall satisfaction (right two columns) and also the percentage of variance that is each sub-satisfaction’s unique contribution to the total variance of overall satisfaction (middle two columns). Sounds confusing, we know, but the table is...
worth a look. Table 4.4, below, shows our sub-satisfactions in the same most-to-least order as Table 4.3, above.

### Table 4.4. Contributions of sub-satisfactions to overall satisfaction.

<table>
<thead>
<tr>
<th>Overall Satisfaction Component:</th>
<th>% Unique Variance Women</th>
<th>% Total Shared Variance Women</th>
<th>% Unique Variance Men</th>
<th>% Total Shared Variance Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Community on Campus</td>
<td>3.20%</td>
<td>26.1%</td>
<td>3.20%</td>
<td>27.0%</td>
</tr>
<tr>
<td>Overall Quality of Instruction</td>
<td>1.85%</td>
<td>26.2%</td>
<td>0.61%</td>
<td>23.1%</td>
</tr>
<tr>
<td>Interaction with Other Students</td>
<td>1.82%</td>
<td>25.0%</td>
<td>2.66%</td>
<td>29.5%</td>
</tr>
<tr>
<td>Courses in Major Field</td>
<td>0.81%</td>
<td>16.0%</td>
<td>0.94%</td>
<td>18.0%</td>
</tr>
<tr>
<td>Student Housing</td>
<td>0.55%</td>
<td>11.8%</td>
<td>0.88%</td>
<td>11.8%</td>
</tr>
<tr>
<td>Class Size</td>
<td>0.37%</td>
<td>19.0%</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>General Education Courses</td>
<td>0.35%</td>
<td>10.8%</td>
<td>0.94%</td>
<td>16.0%</td>
</tr>
<tr>
<td>Academic Advising</td>
<td>0.31%</td>
<td>11.9%</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Social Science Courses</td>
<td>0.24%</td>
<td>12.7%</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Relevance of Coursework to Life</td>
<td>0.24%</td>
<td>14.8%</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Recreational Facilities</td>
<td>***</td>
<td>0.36%</td>
<td>***</td>
<td>13.5%</td>
</tr>
</tbody>
</table>

Here are some things Table 4.4 tells us:

- **Sense of Community** is clearly the most important unique contributor to overall satisfaction for both men and women.

- **Interaction with Other Students**, is 2nd most important for men and virtually tied for 2nd for women, as well.

- No other sub-satisfactions contribute at least 1% of unique variance to overall satisfaction.

- For women, **Overall Quality of Instruction** is the most important academic contributor to overall satisfaction. For men, satisfaction with **Courses in Major Field** is the most important academic contributor.

- Seven of the ten significant sub-satisfactions for women are academic.

- Three of seven significant sub-satisfactions for men are academic.

- The total variance shared between the individual sub-satisfactions and overall satisfaction (two right columns) is substantially larger than their unique contributions (two left columns). This finding suggests that the sub-satisfactions have a lot in common: if you’re satisfied with “X,” you’re likely to be satisfied with “Y.” The finding also means that “total shared variance” can be misleading if used as an indicator of the unique importance of any one sub-satisfaction.

Together, Tables 4.3 and 4.4 demonstrate the importance of a feeling of community and its empirical sibling, peer interaction, to the overall satisfaction our students have for St. Norbert College. Academic variables play important roles, too, to be sure (apparently more so for women than men). But the core of the general sense that one’s educational experiences have been a good match with personal expectations—that completing a
degree from St. Norbert is a fine idea--comes from satisfaction with the quality of relationships, particularly those with peers.

The Components of Satisfaction 2: Experiences while at SNC

Not everyone who attends the same college really experiences the same college. That’s because there are so many curricular and extracurricular opportunities available, each student has to select a subset of them. The permutations and combinations available may not be infinite, but they are plentiful.

It is reasonable to assume that involvement in different activities is associated in varying degrees with students’ overall satisfaction with the totality of their education. After all, colleges offer (or, in some cases, tolerate) such experiences with the expectation that they contribute to the education of those students who participate in them.

The Senior Survey contains a number of items asking respondents to indicate either that they participated (or not) in an experience or that they did so “Not at all,” “Occasionally,” or “Frequently” (some experiences, such as “joined a fraternity” lend themselves to a simple “yes/no” type response, while others, such as “studied with other students” are better matched to the more nuanced response options above).

We explored both kinds of items on the Survey in search of those that showed a statistically-reliable difference in overall satisfaction with SNC between students who participated and those who did not, or between those who participated frequently versus those whose participation was only occasional or not at all. We begin with items of the “yes/no” type.

*Table 4.5* below shows the percentage of seniors very satisfied with SNC for seven experiences where there is a strong, statistically-reliable difference in satisfaction between those who participated in the experience and those who did not. Since the large majority of seniors are satisfied with their SNC education, we looked only at the subset who were very satisfied. The seven experiences are arranged in order, beginning with the highest percentage of participants very satisfied overall with their education at St. Norbert.

![Table 4.5. Participation and Overall Satisfaction with SNC.](image)

<table>
<thead>
<tr>
<th>College Activity</th>
<th>Participants “Very Satisfied”</th>
<th>Non-participants “Very Satisfied”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participated in Student Government</td>
<td>45%</td>
<td>31%</td>
</tr>
<tr>
<td>Participated in Leadership Training</td>
<td>44%</td>
<td>29%</td>
</tr>
<tr>
<td>Participated in Study Abroad Program</td>
<td>44%</td>
<td>33%</td>
</tr>
<tr>
<td>Enrolled in Honors/Advanced Courses</td>
<td>39%</td>
<td>31%</td>
</tr>
<tr>
<td>Joined a fraternity/sorority/social org.</td>
<td>37%</td>
<td>29%</td>
</tr>
<tr>
<td>Attended a cultural awareness workshop</td>
<td>36%</td>
<td>30%</td>
</tr>
<tr>
<td>Took an ethnic studies course</td>
<td>35%</td>
<td>29%</td>
</tr>
</tbody>
</table>

The data in *Table 4.5* indicate there is a relationship between each of the activities shown and the percentage of seniors very satisfied with their SNC education. It is tempting to believe the relationships between the activities and satisfaction is causal ("Study abroad,
and be more satisfied!”), but such a conclusion—while perhaps tenable—needs supportive evidence not yet available.

What can be concluded now from Table 4.5 is that more of the seniors who engaged in the activities above were very satisfied with St. Norbert than was the case with peers not so-engaged. Participation in student government, leadership training, or study abroad show the largest differences between participants and non-participants—more than ten percentage points.

In reviewing Senior Survey items, we found two kinds of experiences that had a significant negative impact on satisfaction: temporarily withdrawing from SNC and working full-time while attending. Twenty-nine percent (29%) of seniors who interrupted their education with a temporary withdrawal reported they were not satisfied with their overall education at St. Norbert, compared with 12% of seniors who had not withdrawn. Similarly, 19% of seniors who had been employed full-time said they were not satisfied vs. 11% of their peers who did not work full-time while attending SNC.

Given the positive associations between the activities in Table 4.5 and the degree of satisfaction with SNC, it is of interest to know if there are differences in the proportions of senior women and men who report engaging in these activities. We found statistically-significant differences in such proportions for five of the activities—all of them favoring women. Table 4.6, below, shows the percentages of senior women and men reporting they engaged in the tabled activities. The activities are listed in order, from the highest to lowest percentage of women.

<table>
<thead>
<tr>
<th>College Activity</th>
<th>% Women</th>
<th>% Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Took Ethnic Studies Course</td>
<td>53%</td>
<td>47%</td>
</tr>
<tr>
<td>Joined Sorority/Fraternity/Soc Org</td>
<td>42%</td>
<td>34%</td>
</tr>
<tr>
<td>Studied Abroad</td>
<td>34%</td>
<td>15%</td>
</tr>
<tr>
<td>Took Leadership Training</td>
<td>23%</td>
<td>19%</td>
</tr>
<tr>
<td>In Honors/Adv. Courses</td>
<td>17%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Although the differences between women and men participants are statistically-reliable, they are (with the exception of Study Abroad) not large, typically on the order of five to eight percentage points.

When we employed multiple regression to determine which of the activities or experiences made statistically-significant unique contributions to overall satisfaction with SNC, participation in leadership training was the only activity from Table 4.6 to meet this criterion for both women and men (additionally, taking an ethnic studies course met the statistical criterion for men).

Perhaps because of the limited range of information provided by a binary (participated/didn’t participate) response, the statistical correlations between participation in the activities discussed in this section and overall satisfaction are not large, even though statistically-reliable. Somewhat surprisingly, the relationship between
participation and satisfaction (evaluated by multiple regression) was stronger for men than it was for women.

For example, even though more women report participating in leadership training, the contribution made by the unique variance of this variable to overall satisfaction yielded a correlation of 0.137 for men vs. 0.107 for women. For all the activity variables in our multiple regression analyses taken together, the percentage of variation in overall satisfaction accounted for by these variables was a modest 6.9% for men, but an even more modest 1.5% for women. Thus, the impact of participation in the activities reported in this section is greater for men: involvement mattered more, at least with regard to satisfaction with one’s SNC education.

*********************************

The Senior Survey contains a large selection of collegiate experiences and activities for which respondents select among three options: not at all, occasionally, or frequently. We found ten such experiences with statistically-reliable differences in overall satisfaction. Because very few seniors chose the “not at all” response option, Table 4.7, below, only shows percentages for seniors who selected either the “occasionally” or the “frequently” response. And, as we did in Table 4.5, Table 4.7 shows the percentage of seniors very satisfied with their overall experience at St. Norbert.

### Table 4.7. Percentage of seniors very satisfied with SNC, by level of Involvement.

<table>
<thead>
<tr>
<th>College Activity/Experience</th>
<th>“Occasional” participants “Very Satisfied”</th>
<th>“Frequent” participants “Very Satisfied”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voted in Student Election</td>
<td>34%</td>
<td>51%</td>
</tr>
<tr>
<td>Turned in assignments electronically</td>
<td>31%</td>
<td>42%</td>
</tr>
<tr>
<td>Rec’d assignments via Internet</td>
<td>32%</td>
<td>39%</td>
</tr>
<tr>
<td>Met Faculty outside class/office</td>
<td>24%</td>
<td>39%</td>
</tr>
<tr>
<td>Been Guest in Prof’s Home</td>
<td>36%</td>
<td>39%</td>
</tr>
<tr>
<td>Studied with other Students</td>
<td>27%</td>
<td>38%</td>
</tr>
<tr>
<td>Discussed course w/ other Students</td>
<td>25%</td>
<td>36%</td>
</tr>
<tr>
<td>Felt supported by Family</td>
<td>19%</td>
<td>35%</td>
</tr>
<tr>
<td>Took Interdisciplinary Courses</td>
<td>29%</td>
<td>35%</td>
</tr>
<tr>
<td>Worked on Group Projects in Class</td>
<td>23%</td>
<td>32%</td>
</tr>
</tbody>
</table>

The “gap” in very satisfied students (seventeen percentage points) is most noticeable for students voting in a student election—the activity with the highest number of very satisfied respondents (51%). It is smallest (three percentage points) for guest in professor’s home. Frequently voting in a student election would seem to require a level of interest and involvement in SNC beyond that needed to be a guest of a faculty member. Note, however, that frequently feeling supported by one’s family (as opposed to perceiving such support as occasional) yielded the second largest difference in the percentage of very satisfied students—sixteen points.

The activities above are all positively associated with overall satisfaction with one’s St. Norbert education. But there are other events or experiences that have a negative relationship with such satisfaction. We found six that yielded statistically-reliable
differences among survey respondents who had endorsed the response options of \textit{Not at All}, \textit{Occasionally}, or \textit{Frequently}.

As one might expect, given the negative relationship between these experiences and overall satisfaction, endorsement of the \textit{Not at All} response is most highly associated with being \textit{very satisfied}. Satisfaction levels decrease as one moves from there through \textit{occasional} and \textit{frequent} occurrences, with the greatest losses in satisfaction occurring for respondents who report \textit{frequent} occurrences of the negative experience.

\textit{Table 4.8}, below, lists the negative experiences, beginning with the one whose absence (i.e., it occurs \textit{not at all}) is most positively associated with being \textit{very satisfied} with one’s education at St. Norbert. For this table, the percentage of \textit{very satisfied} respondents is shown for each of the three response alternatives.

<table>
<thead>
<tr>
<th>Experience</th>
<th>\textit{Not at All}</th>
<th>Occasionally</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Been Bored in Class</td>
<td>59%</td>
<td>36%</td>
<td>20%</td>
</tr>
<tr>
<td>No time to Study because of family</td>
<td>36%</td>
<td>28%</td>
<td>15%</td>
</tr>
<tr>
<td>Missed class because of Job</td>
<td>35%</td>
<td>26%</td>
<td>10%</td>
</tr>
<tr>
<td>No time to study because of Job</td>
<td>34%</td>
<td>31%</td>
<td>22%</td>
</tr>
<tr>
<td>Not complete homework on time</td>
<td>34%</td>
<td>31%</td>
<td>20%</td>
</tr>
<tr>
<td>Faculty not take comments seriously</td>
<td>33%</td>
<td>21%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Not finding class boring—ever—has the greatest positive relationship with being \textit{very satisfied} with one’s educational experiences at St. Norbert. But \textit{frequent} boredom does not lead to the least satisfaction. Rather, frequently missing class because of one’s job responsibilities has the smallest (10\%) percentage of \textit{very satisfied} students. For none of the students with \textit{frequent} negative experiences, however, does the percentage of \textit{very satisfied} rise higher than 22\%.

We found statistically-reliable gender differences in frequency of occurrence for five of the ten positive experiences and for four of the six negative ones. \textit{Table 4.9} shows whether men or women report more frequent occurrences of each of the nine experiences.

<table>
<thead>
<tr>
<th>Experiences, by Type:</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>\textbf{Positive Experiences (more satisfaction)}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voted in Student Election</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>Rec’d Assignments through the Internet</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>Turned in Assignments Electronically</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>Felt Supported by Family</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>Took Interdisciplinary Courses</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>\textbf{Negative Experiences (less satisfaction)}</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Felt Bored in Class</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>Not Complete Homework on Time</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>No Time to Study because of Job</td>
<td>More</td>
<td></td>
</tr>
<tr>
<td>Missed Classes because of Job</td>
<td>More</td>
<td></td>
</tr>
</tbody>
</table>
For three of the five positive experiences for which there is a gender difference, women report more frequent occurrences. Conversely, men report more frequent occurrences for three of the four negative experiences. Generally, the differences are not large, even though statistically-stable. However, they provide indirect support for the hypothesis that the difference between SNC men and women in overall satisfaction with their SNC education (noted at the beginning of this chapter) is “real” and not likely the result of some kind of response bias.

As before, we subjected our activities/experiences to a multiple regression analysis in order to determine which of the positive and negative variables contributed the most independent variance to overall satisfaction with SNC.

For both sexes, the negative experience, being bored in class, clearly has the greatest unique impact on overall satisfaction. None of the four other significant contributing experiences (which are the same for both men and women) come close in the strength of their relationship with overall satisfaction. The four additional contributors are:

- Missed class because of work (negative)
- Voted in a student election (positive)
- Studied with other students (positive)
- Discussed course content with other students (positive)

In the section of this chapter just-preceding, we noted that the strength of the overall relationship between the group of independent activity contributors and overall satisfaction with one’s SNC education was modest for both sexes, but greater for men than for women. We have the identical finding for the activities in this section.

Multiple regression analyses show that variation in our set of five variables accounts for about 10% of the variation in overall satisfaction for women and about 15% for men. Thus, although more women report more frequent positive activities and fewer negative ones, the impact of these activities on overall satisfaction appears—occurrence for occurrence—to be greater for male students.

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**The Components of Satisfaction 3: Negotiating the College Environment**

From 2003 through 2005 the Senior Survey included items which asked respondents to rate their level of success (“Not Successful,” “Somewhat Successful,” “Very Successful”) in the accomplishment of seven “tasks” judged to be central to a positive college experience. Forty-three percent (N = 875) of the total SNC sample of Seniors from 2000-2006 we have been using in this monograph responded to the seven items.

Although our sample size is more limited here than for other Senior Survey items reported above, our analyses showed that every one of the items was strongly associated with ratings of overall satisfaction. Table 4.10 shows the percentage of “somewhat successful” and “very successful” seniors who reported they were very satisfied with their education at St. Norbert. We did not include percentages from seniors reporting they were “not successful.” As one might expect, the vast majority of graduating seniors do not endorse this particular response option. Only a small minority (never more than 4%) selected it for any of the seven task items shown in Table 4.10.
Table 4.10. Success and overall satisfaction with SNC.

<table>
<thead>
<tr>
<th>College Task</th>
<th>Somewhat Successful</th>
<th>Very Successful</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% Very Satisfied w/SNC</td>
<td>% Very Satisfied w/SNC</td>
</tr>
<tr>
<td>Utilizing Campus Services</td>
<td>22%</td>
<td>48%</td>
</tr>
<tr>
<td>Getting to Know Faculty</td>
<td>24%</td>
<td>42%</td>
</tr>
<tr>
<td>Developing Close Relationships</td>
<td>11%</td>
<td>38%</td>
</tr>
<tr>
<td>Understanding Prof’s Expectations</td>
<td>17%</td>
<td>38%</td>
</tr>
<tr>
<td>Adjusting to Academic Demands</td>
<td>18%</td>
<td>38%</td>
</tr>
<tr>
<td>Developing Effective Study Skills</td>
<td>25%</td>
<td>37%</td>
</tr>
<tr>
<td>Managing Time Effectively</td>
<td>25%</td>
<td>36%</td>
</tr>
</tbody>
</table>

In Table 4.10 the minimum percentage difference between the very successful and somewhat successful seniors is eleven percentage points. Developing Close relationships yields the largest difference—27 percentage points—followed by Utilizing Campus Services (26 point difference).

What does it mean to be “very successful” in accomplishing the tasks listed in Table 4.10? What distinguishes the “very successful” from their “somewhat successful” peers? At this time we do not know the answers to these—and similar—questions. They are left for future research. But it is quite clear that seniors who rate themselves “very successful” in the achievement of these tasks have correspondingly high levels of satisfaction with their education at St. Norbert—clearly higher than their peers whose self-rated mastery of these tasks is less complete.

Do SNC men and women report similar levels of mastery? On only one task—getting to know faculty—do the sexes not differ in a statistically-reliable manner (48% of men and 47% of women report they have been “very successful” here). On the remaining six tasks, a greater percentage of women students report they were “very” successful in their mastery, although the percent reporting this level of success ranges from a high of 72% to a low of 47%

Table 4.11 compares the percentages of very successful senior men and women on each task, in order from the highest to lowest percentage for women. The differences between very successful women and men average around 8-10 percentage points. Developing Close Relationships had the largest percentage of “very successful” women and men, while Utilizing Campus Services had the smallest percentage, again for both women and men.

(Table 4.11 on next page)
Table 4.11. Percent of seniors reporting very successful mastery.

<table>
<thead>
<tr>
<th>College Task:</th>
<th>Women % “Very Successful” Mastery</th>
<th>Men % “Very Successful” Mastery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing Close Relationships</td>
<td>77%</td>
<td>68%</td>
</tr>
<tr>
<td>Adjust to Academic Demands</td>
<td>72%</td>
<td>62%</td>
</tr>
<tr>
<td>Understand Prof’s Expectations</td>
<td>71%</td>
<td>64%</td>
</tr>
<tr>
<td>Manage Time Effectively</td>
<td>59%</td>
<td>53%</td>
</tr>
<tr>
<td>Develop Effective Study Skills</td>
<td>59%</td>
<td>50%</td>
</tr>
<tr>
<td>Utilizing Campus Services</td>
<td>42%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Viewed from the perspective of “success” rates, the first three tasks listed appear to form one cluster (percentages in the ‘70s for women), followed by a cluster of two tasks (percentages in the ‘50s), with utilizing campus services standing alone (fewer than half of seniors reporting they were “very successful”).

What makes this ordering interesting is that the most (relationships) and least (services) successfully-accomplished tasks are the two out of the seven that contribute statistically-reliable unique variance to overall satisfaction. For men, these are the only two tasks which do so; the multiple regression for women adds a third contributor—understanding professor’s expectations. The addition of this third significant variable resulted in a slightly higher (19% vs. 17%) percentage of variance in overall satisfaction accounted for in the multiple regression analysis of task mastery for our women students.

In the previous section, we noted that more women reported greater participation in activities related to overall satisfaction. Table 4.11 extends this finding. It shows that more women report being very successful in mastery of important college tasks. But—also noted in the previous section—the impact of participation (or, in this case, mastery) on overall satisfaction appears more intense for men than for women, at least for some tasks.

Case in Point: Developing close relationships is the task with the greatest percentage of seniors (both men and women) reporting mastery. In separate multiple regression analyses (discussed just-above), it is the most important variable for men but second (behind utilizing campus services) for women.

Further, the absolute size of the part correlation (a type of correlation coefficient emphasizing the size of the relationship between two variables based on unique variance) between developing close relationships and overall satisfaction is greater for men (0.225) than for women (0.161). For men, there is a somewhat stronger connection, therefore, between mastery of this task and satisfaction with one’s St. Norbert education.

This finding, by the way, does not hold for the other common variable in our multiple regression analyses—utilizing campus services. Our senior men and women are virtually identical here (part correlation of 0.162 for men and 0.169 for women).
The Components of Satisfaction 4: Self-reported Improvements

The Senior Survey contains a section asking respondents to report changes in a variety of desirable skill and knowledge areas. The item stem reads as follows:

Compared with when you first entered this college, how would you describe your...

The response options for this set of items is: Much weaker, Weaker, No Change, Stronger, and Much Stronger. Given the social desirability of the items listed, it is not surprising that the very large majority of responses are in the “stronger/very stronger” range. But it should not be surprising, either, if the aggregation of responses in the “stronger” range also reflects genuine changes, even if there may be some exaggeration present as well. It would be difficult to argue that most college students are impervious to the positive influences of curricular and cocurricular activities exerted daily over four academic years, especially when the vast majority of students voluntarily seek such experiences.

The list of self-change areas is shown below. We have organized the list on the basis of content, with more academic areas listed first:

- General knowledge
- Knowledge of a particular field
- Analytical and problem-solving skills
- Ability to think critically
- Mathematical ability
- Foreign language ability
- Writing skills
- Computer skills
- Public speaking skills
- Understanding nation’s social problems
- Understanding problems facing your community
- Knowledge of people from different races/cultures
- Acceptance of different races/cultures
- Leadership abilities
- Interpersonal skills
- Religious beliefs/convictions

Indirect support for the general validity of self-reported changes comes from the fact that students readily discriminate among the Survey items. Many more students, for example, report increases in their general knowledge and knowledge of a particular field than they do in foreign language ability and mathematical ability. The latter two academic areas are quite likely to provide extensive exposure to many fewer students than, say, mandatory general education courses or courses in a major field.

Table 4.12, below, lists the self-change areas, from highest to lowest, in the percentage of seniors reporting they are much stronger. We limited ourselves to this response option because combining stronger and much stronger together obscures important differences among the areas. To take an extreme example, 70% of seniors could be stronger and 20% much stronger in foreign language ability, while 20% of seniors could be stronger and 70% much stronger in knowledge of particular field. Adding the two categories together...
gives the identical 90% total result for both, even though the components of the two additions are drastically different.

Table 4.12. Percent much stronger in self-change areas.

<table>
<thead>
<tr>
<th>Knowledge, Ability, or Skill</th>
<th>% &quot;Much Stronger&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge of a Particular Field</td>
<td>65%</td>
</tr>
<tr>
<td>General Knowledge</td>
<td>47%</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>38%</td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td>36%</td>
</tr>
<tr>
<td>Writing Skills</td>
<td>33%</td>
</tr>
<tr>
<td>Analytical Skills /Problem-Solving</td>
<td>32%</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>32%</td>
</tr>
<tr>
<td>Leadership</td>
<td>30%</td>
</tr>
<tr>
<td>Public Speaking Skills</td>
<td>29%</td>
</tr>
<tr>
<td>Understanding Nation's Social Problems</td>
<td>25%</td>
</tr>
<tr>
<td>Knowledge of Different Races/Cultures</td>
<td>20%</td>
</tr>
<tr>
<td>Acceptance of Diff. Races/Cultures</td>
<td>18%</td>
</tr>
<tr>
<td>Understanding Community Problems</td>
<td>17%</td>
</tr>
<tr>
<td>Religious Beliefs/Convictions</td>
<td>11%</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>11%</td>
</tr>
<tr>
<td>Mathematical Skills</td>
<td>10%</td>
</tr>
</tbody>
</table>

To make it easier to grasp the differences among the self-change areas, we put the same information in graphic form in the chart below (Fig. 4.1). The chart makes it easy to see that almost two-thirds of seniors report they are now “much stronger” in their “knowledge of a particular field,” while only about 10% make that assertion with regard to increases in their mathematical and foreign language skills, or their religious beliefs and convictions.

It is possible to argue that, to some unknown extent, a relatively smaller percentage of much stronger respondents in an area is the result of a higher “base.” For example if a majority of students judged their religious beliefs to be quite strong when they entered SNC, the pool of respondents available to change to “much stronger” as seniors would be smaller than a comparable pool of, say, seniors reporting change “in a particular [college major] field.”

We take no side in this matter, except to note that the relative differences shown in Table 4.12 and graphically in Figure. 4.1 appear to be generally consistent with common sense expectations.
Women and men respondents show statistically-reliable differences on many (but not all) of the knowledge and skill areas. Table 4.13 below shows the percentages of men and women who report no change, stronger, or much stronger for the ten areas with significant gender differences. Order is by magnitude of the chi square test statistic (largest gender difference to smallest).

Table 4.13. Women-Men differences by knowledge/skill areas.

<table>
<thead>
<tr>
<th>Knowledge/Skill</th>
<th>No Change</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>Mathematical Skills</td>
<td>47%</td>
<td>36%</td>
<td>36%</td>
<td>39%</td>
<td>8%</td>
<td>14%</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>51%</td>
<td>53%</td>
<td>19%</td>
<td>15%</td>
<td>12%</td>
<td>8%</td>
</tr>
<tr>
<td>Knowledge Diff. Cultures</td>
<td>23%</td>
<td>27%</td>
<td>53%</td>
<td>52%</td>
<td>22%</td>
<td>18%</td>
</tr>
<tr>
<td>Acceptance Diff. Cultures</td>
<td>37%</td>
<td>34%</td>
<td>45%</td>
<td>43%</td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>Problem-solving</td>
<td>6%</td>
<td>6%</td>
<td>63%</td>
<td>57%</td>
<td>31%</td>
<td>35%</td>
</tr>
<tr>
<td>Understanding Soc. Probs.</td>
<td>16%</td>
<td>16%</td>
<td>58%</td>
<td>56%</td>
<td>25%</td>
<td>26%</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>5%</td>
<td>7%</td>
<td>58%</td>
<td>54%</td>
<td>37%</td>
<td>39%</td>
</tr>
<tr>
<td>Knowledge Particular Field</td>
<td>1%</td>
<td>2%</td>
<td>32%</td>
<td>36%</td>
<td>66%</td>
<td>61%</td>
</tr>
<tr>
<td>General Knowledge</td>
<td>1%</td>
<td>2%</td>
<td>51%</td>
<td>49%</td>
<td>47%</td>
<td>48%</td>
</tr>
<tr>
<td>Public Speaking</td>
<td>18%</td>
<td>16%</td>
<td>53%</td>
<td>51%</td>
<td>28%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Although the table appears rather complicated, the information provided simply suggests that the statistically-reliable differences found are not large, typically of the order of two to four percentage points. The largest gender differences appear in mathematical skills (favoring men) and knowledge of a particular field (favoring women).
Table 4.13 shows that more men than women report being much stronger in mathematical skills, critical thinking, and problem solving, while the reverse is true for foreign language skills and knowledge and acceptance of different cultures. There were no statistically-reliable differences in the knowledge/skill areas of: religious beliefs, leadership skills, interpersonal skills, understanding nation’s social problems, understanding community problems, or writing skills (so they are not shown in the Table).

In sum, Table 4.12 (and its companion, Figure 4.1) shows there are wide differences in the percentages of seniors reporting they are much stronger in the sixteen knowledge/skill areas reported above. Gender differences in these same sixteen areas, shown in Table 4.13, range from moderate to statistically undetectable.

The relationship between reported growth in each of the sixteen knowledge/skill areas and overall satisfaction varies. We focused on the students in each area who reported they were much stronger and noted the percentage of those students who also reported they were very satisfied with their St. Norbert education. Table 4.14 shows the percentage of “much stronger” seniors who were very satisfied with SNC, arranged from the highest to lowest.

Table 4.14. Percent of students responding much stronger who were very satisfied with St. Norbert.

<table>
<thead>
<tr>
<th>Ability or Skill Area (“Much Stronger”)</th>
<th>% Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding Community Problems</td>
<td>53%</td>
</tr>
<tr>
<td>Understanding Nation’s Social Problems</td>
<td>49%</td>
</tr>
<tr>
<td>Leadership Skills</td>
<td>49%</td>
</tr>
<tr>
<td>Public Speaking Skills</td>
<td>49%</td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td>48%</td>
</tr>
<tr>
<td>Analytical Skills /Problem-Solving</td>
<td>48%</td>
</tr>
<tr>
<td>Acceptance of Diff. Races/Cultures</td>
<td>48%</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>47%</td>
</tr>
<tr>
<td>Writing Skills</td>
<td>47%</td>
</tr>
<tr>
<td>Religious Beliefs/Convictions</td>
<td>47%</td>
</tr>
<tr>
<td>Mathematical Skills</td>
<td>47%</td>
</tr>
<tr>
<td>General Knowledge</td>
<td>45%</td>
</tr>
<tr>
<td>Knowledge of Different Races/Cultures</td>
<td>45%</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>42%</td>
</tr>
<tr>
<td>Knowledge of a Particular Field</td>
<td>40%</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>38%</td>
</tr>
</tbody>
</table>

As Table 4.14 shows, the percentage of very satisfied seniors ranges from 53% to 38%, with many ties. The first eleven knowledge/skill areas (from understanding community problems to mathematical skills) differ by only six percentage points.

Note, too, that the ordering in Table 4.14 is quite different from that shown in Table 4.12 (and its visual twin, Figure 4.1). The percentage of students who report they are much stronger in an area is not associated with a similar rank when these same students are
ordered by the percentage who are very satisfied with SNC. For example, General Knowledge and Knowledge of a Particular Field were the top two “strength” areas in Table 4.12, but were near the bottom in Table 4.14’s “satisfaction” list. Conversely, Understanding Community Problems is first on the “satisfaction” list in Table 4.14, but ranks 13th in Table 4.12.

There is a significant “gap” in high satisfaction with one’s St. Norbert education between those seniors who report they were much stronger in any given knowledge/skill area and seniors who reported they were (just) stronger. Table 4.15 repeats the findings in Table 4.14, but adds a column showing the percentage of “stronger” students who report themselves very satisfied with SNC. The last column shows the difference in percentages between seniors rating themselves much stronger in a skill/knowledge area and those with a self-rating of “stronger.” The highest and lowest numbers in each column are enlarged for convenient identification.

Table 4.15. Percent “much stronger” and “stronger” students who are very satisfied.

<table>
<thead>
<tr>
<th>Ability or Skill</th>
<th>Much Stronger</th>
<th>Stronger</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent “Very Satisfied”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding Community Problems</td>
<td>53%</td>
<td>32%</td>
<td>21%</td>
</tr>
<tr>
<td>Understanding Nation's Social Problems</td>
<td>49%</td>
<td>29%</td>
<td>20%</td>
</tr>
<tr>
<td>Leadership</td>
<td>49%</td>
<td>27%</td>
<td>22%</td>
</tr>
<tr>
<td>Public Speaking Skills</td>
<td>49%</td>
<td>27%</td>
<td>22%</td>
</tr>
<tr>
<td>Interpersonal Skills</td>
<td>48%</td>
<td>26%</td>
<td>22%</td>
</tr>
<tr>
<td>Analytical Skills /Problem-Solving</td>
<td>48%</td>
<td>26%</td>
<td>22%</td>
</tr>
<tr>
<td>Acceptance of Diff. Races/Cultures</td>
<td>48%</td>
<td>27%</td>
<td>21%</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>47%</td>
<td>24%</td>
<td>23%</td>
</tr>
<tr>
<td>Writing Skills</td>
<td>47%</td>
<td>26%</td>
<td>21%</td>
</tr>
<tr>
<td>Religious Beliefs/Convictions</td>
<td>47%</td>
<td>30%</td>
<td>17%</td>
</tr>
<tr>
<td>Mathematical Skills</td>
<td>47%</td>
<td>31%</td>
<td>16%</td>
</tr>
<tr>
<td>General Knowledge</td>
<td>45%</td>
<td>21%</td>
<td>24%</td>
</tr>
<tr>
<td>Knowledge of Different Races/Cultures</td>
<td>45%</td>
<td>32%</td>
<td>13%</td>
</tr>
<tr>
<td>Computer Skills</td>
<td>42%</td>
<td>27%</td>
<td>15%</td>
</tr>
<tr>
<td>Knowledge of a Particular Field</td>
<td>40%</td>
<td>17%</td>
<td>23%</td>
</tr>
<tr>
<td>Foreign Language</td>
<td>38%</td>
<td>29%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Within each of the three columns, the range is (by sheer chance) identical—fifteen percentage points. For students reporting “Much Stronger,” this range is from a high of 53% very satisfied to 38%. For “Stronger” students, the range is from 32% very satisfied to 17%. The “gap” in satisfaction between much stronger and stronger seniors ranges from 24 percentage points (for the area of General Knowledge) to 9 percentage points (for Foreign Language).

Growth in General Knowledge and Knowledge of a Particular Field are certainly core educational outcomes. Note the difference in overall satisfaction for students who rate themselves much stronger vs. those rating themselves stronger. For General Knowledge it is (45% - 21% =) 24 percentage points. For Knowledge of a Particular Field it is (40% - 17% = ) 23 percentage points. Less than a quarter of students whose self-rated attainment is (only) stronger are very satisfied with their overall education at St. Norbert.
Similar to the contrasts above, students who rate themselves much stronger on the highly desirable skill outcomes of Critical Thinking and Problem-Solving show, respectively, a 23 and 22 percentage point positive difference in high satisfaction when compared with their peers who just rate their growth in these skills as stronger. It is clear that high levels of self-rated accomplishment in these four very important learning outcomes are associated with significantly larger proportions of very satisfied students.

In general, for all the knowledge/skill areas shown in Table 4.15, the differences in overall satisfaction are easily over ten percentage points, sometimes over twenty points, in the much stronger/stronger comparisons. The sole exception is Foreign Language. It had the smallest percentage (38%) of much stronger students who rated themselves very satisfied with their SNC education and the smallest (9 percentage points) difference between much stronger and stronger students.

**Concluding Remarks on Satisfaction as an Outcome**

We began this chapter with a defense of overall satisfaction with St. Norbert as an important affective educational outcome. There we put the argument that students who were satisfied with St. Norbert would be more motivated “to engage the curriculum and co-curriculum” while here and later, as alumnae and alumni, be financially and otherwise more involved with alma mater.

Our review of the components of overall satisfaction adds another argument in favor of the desirability of high levels of this outcome: virtually all the components associated with overall satisfaction are themselves attractive and educationally-desirable. It is gratifying to note that…

Students who report high levels of satisfaction with their overall experience at St. Norbert are more likely to…

- be satisfied with: the sense of community on campus, interactions with peers, the quality of classroom instruction generally, courses in their major field, and general education courses.

- be involved with student government and/or vote in student government elections, study with other students and discuss course content with them, meet with faculty outside class, feel supported by parents, take interdisciplinary and diversity courses, complete homework on time, find classes interesting, attend classes regularly, become involved in leadership training, study abroad.

- report significant success in developing effective study skills, getting to know faculty, adjusting to academic demands, understanding professors’ expectations, managing time effectively, and developing close relationships with other students.

- report high levels of growth in general knowledge, knowledge of their major, critical thinking, problem-solving, leadership, interpersonal skills, writing, speaking and understanding different races and cultures.
Summary: Gender and Satisfaction with the “SNC Experience
In general, more women than men students at SNC report the highest levels of overall satisfaction and fit the descriptive elements above. But our analyses also suggest that, for at least some of the components of overall satisfaction, the impact is greater for men. This seems particularly true with respect to relationships with fellow-students. Although gender stereotypes might suggest peer relationships are more important for young women than young men, our findings suggest that would be a misleading oversimplification.

After studying the mass of information in this chapter, the general impression would be that women are somewhat more “engaged” in all the dimensions of the SNC educational experience than are men. But this “quantitative” analysis needs some qualification. Even if more women are involved in more aspects of their education, there is evidence to suggest that men’s satisfaction levels are more affected by their experiences associated with an SNC education, even though they immerse themselves in fewer of them.
The Impact of Gender Revisited

The information presented in previous chapters points to the conclusion that a larger proportion of SNC women than of SNC men appear to be engaged in, benefit from—and be more satisfied with—the academic and cocurricular dimensions of their education at St. Norbert. This conclusion is a broad generality that might well need some adjustment as a result of this chapter's more in-depth exploration of the role of gender in the SNC experience. Here we present some initial findings that suggest our general conclusion on the “greater benefits, greater satisfaction” for SNC women needs to be nuanced.

Our findings modify the impression that, as a solo variable, gender has essentially a one-way (and invariant) influence on students’ experiences at SNC. Gender is also an “influencee.” That is, gender interacts with other variables and, as a result, its general impact on at least some educational outcomes is modified.

In this chapter we will show that the variables educational attainment (as measured by GPA) and academic major (illustrated by comparisons of Business and Education majors with all others) alter the association that gender has with several important educational outcomes.

Educational Attainment

In the chapter on Academic Achievement we reported findings indicating that, on average, men entering SNC arrive with an average HSGPA about 0.30 points lower than their women peers. This “gap” persists into the freshman year and beyond.

The approximately 0.30 GPA difference is ubiquitous and appears to be robust, so robust in fact, that it would be easy to conclude it is present throughout the entire GPA spectrum. One way to check this assumption is to compute GPA quintiles for HSGPA and SNC GPA (one could just as well compute quartiles, deciles, etc.; we chose quintiles as a reasonable breakdown of the GPA distribution) and see if the “gender gap” is present in each one.

Our sample once again consisted of all first year students from the years 2005-2007 who had both an HSGPA and a first semester SNC GPA. This sample contains 654 men and 879 women. We began our exploration by computing HSGPA and SNC GPA quintiles on the combined total of 1547 first year students. We then separately determined the percentage of men and of women in each of the five quintiles and cross-tabbed HSGPA quintiles with SNC quintiles. This cross-tabbing made it possible to track any shift in GPAs from high school to 1st semester SNC GPA. The resulting table (Table 5.1) is on the next page.
Table 5.1. Percent first year students from each high school GPA quintile who are in each SNC GPA quintile after one semester

<table>
<thead>
<tr>
<th>2005-2007FF</th>
<th>Quintiles</th>
<th>1st Sem GPA (Quintiles)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;= 2.84</td>
<td>2.39 - 2.88</td>
<td>2.89 - 3.25</td>
</tr>
<tr>
<td>654 Men</td>
<td>H.S. GPA (Quintiles)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;= 2.84</td>
<td>54%</td>
<td>27%</td>
<td>11%</td>
</tr>
<tr>
<td>2.85 - 3.21</td>
<td>36%</td>
<td>32%</td>
<td>18%</td>
</tr>
<tr>
<td>3.22 - 3.54</td>
<td>17%</td>
<td>24%</td>
<td>31%</td>
</tr>
<tr>
<td>3.55 - 3.83</td>
<td>6%</td>
<td>17%</td>
<td>26%</td>
</tr>
<tr>
<td>3.84+</td>
<td>7%</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>Percent Men in each SNC GPA Quintile</td>
<td>29%</td>
<td>24%</td>
<td>19%</td>
</tr>
<tr>
<td>879 Women</td>
<td>H.S. GPA (Quintiles)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;= 2.84</td>
<td>40%</td>
<td>36%</td>
<td>18%</td>
</tr>
<tr>
<td>2.85 - 3.21</td>
<td>38%</td>
<td>30%</td>
<td>22%</td>
</tr>
<tr>
<td>3.22 - 3.54</td>
<td>15%</td>
<td>24%</td>
<td>23%</td>
</tr>
<tr>
<td>3.55 - 3.83</td>
<td>5%</td>
<td>15%</td>
<td>27%</td>
</tr>
<tr>
<td>3.84+</td>
<td>2%</td>
<td>6%</td>
<td>17%</td>
</tr>
<tr>
<td>Percent Women in each SNC GPA Quintile</td>
<td>16%</td>
<td>20%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Read this table from left to right: Example: 54% of 2005-07 Freshmen Men with HSGPA of <=2.84 had SNC SEM1 GPA <=2.38

Table 5.1 is data-dense and complex, so let’s begin with some basics:

- The five quintiles for H.S. GPA & 1st Sem GPA show GPA ranges. For example, an HSGPA of 3.22 -- 3.54 falls in the third (middle) HSGPA quintile. A 1st semester SNC GPA of 2.89 – 3.25 also falls in the third SNC quintile, and so on.

- For convenience, the five grey cells in each table highlight the junctures between “like” quintiles. Thus, 23% of first year women were in the third H.S.GPA quintile and the third 1st Sem GPA quintile.

- There is “regression toward the mean” for the extreme HSGPA quintiles. That is, first year students who are in either the lowest or highest H.S. GPA quintiles move toward the middle of the SNC 1st Sem GPA quintiles. This holds for both men and women.

- Recall that the two quintile sets (HSGPA & SNC GPA) are generated from the total first year sample, and are not gender-specific. This makes it possible to see the percentage of each gender in Table 5.1 that falls into each SNC GPA quintile. Note, for example, that 29% of males are in the lowest (total freshman) SNC quintile (1st Sem SNC GPA <= 2.38), while only 16% of females have GPAs placing them there. Forty-two percent of freshman women are in the top two quintiles; the corresponding percentage for men is 28%.

Essentially, Table 5.1 is a kind of “road map” that traces the migration of students from each high school quintile into one or other of the five SNC 1st Sem GPA quintiles. Inspection of the table makes it clear that there is much movement, movement that would not be known as long as one focuses only on averages. The table thus provides additional
information on “what happens” as students transition from high school through their first semester at St. Norbert.

Note, for example, that only 40%-50% of first year men and women from the lowest HSGPA quintile are in that same 1st Sem SNC GPA quintile (very similar results obtain for the highest HSGPA quintile as well). The table shows where the others moved in the GPA distribution.

The migration evident in the above table is a visual indicator of the less-than-perfect correlation between HSGPA and 1st semester college GPA. Fourteen percent of men in the highest (3.84+) HSGPA quintile are in the bottom two quintiles for 1st Sem SNC GPA; so are 8% of women—certainly a major (and disappointing) turn in academic fortune. Conversely, 8% of men and 6% of women in the lowest (<=2.84) HSGPA quintile are found in the top two 1st Sem SNC GPA quintiles—a pleasant surprise.

Despite the quintile migration noted for both sexes in the above table, the information obtained from it does not contradict the general finding earlier in this monograph regarding the approximately 0.30 GPA average difference between men and women. Note, for example, that 12% of 2005-07 SNC first year men are in the top SNC GPA Quintile, but that 19% of SNC women reside there. The conclusion that SNC women—as a group—have higher academic achievement (as measured by GPA) than SNC men is actually reinforced by inspection of GPA quintile percentages.

But the conclusion regarding higher academic achievement by women needs modification when we explore the “GPA spectrum.” Table 5.2, below, provides seven percentile “points” along this spectrum of 2005-07 SNC first year student HSGPAs. The table shows the GPAs of men and women at each point, and the difference between men/women GPAs at the seven percentile points shown. Focus on these (bold-faced) “bottom line” differences as you read from left to right.

Table 5.2. High school GPAs for first year men and women at various percentiles.

<table>
<thead>
<tr>
<th>2005-07 1st Year Students</th>
<th>Percentiles for HSGPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Men</td>
<td>2.21</td>
</tr>
<tr>
<td>Women</td>
<td>2.56</td>
</tr>
<tr>
<td>Diff (M-F)</td>
<td>-0.35</td>
</tr>
</tbody>
</table>

Note how the “gap” between HSGPAs shrinks as one moves from the below average percentiles (5, 10, 25) to the above-average quintiles (75, 90, 95). First year men with above-average GPAs are much more like their women peers than is the case with below average men. At the 95th percentile, the GPA difference is only .07 in favor of women.

Table 5.2 shows that the ubiquitous average difference of about 0.30 in HSGPA between entering men and women is itself the average of large differences in the ranks of the below-average men and women and much smaller differences in the higher ranks. The 0.30 mean difference in male/female GPA does not apply “across the board” but is modified by (interacts with) the level of academic achievement.
The table (Table 5.1) that opens this chapter provides evidence that HSGPA and SNC First Semester GPA do not move in lockstep. Being below average on one is not an absolute guarantee of below average status on the other (and vice versa). Still, there is sufficient general correspondence between the two GPAs to make HSGPA a practically useful (and, by far, best) predictor of SNC 1stSem GPA.

Given this general finding, we can reasonably assume that a table of 1st Sem SNC GPAs identical in format to the HSGPAs shown in Table 5.2, above, will yield findings consistent with its counterpart on the previous page. This table (Table 5.3) is below.

Table 5.3. SNC GPAs for entering men and women after one semester.

<table>
<thead>
<tr>
<th>2005-07 1st Yr. Students</th>
<th>Percentiles for SNC SEM1 GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>1.50</td>
</tr>
<tr>
<td>Female</td>
<td>1.82</td>
</tr>
<tr>
<td>Diff (M-F)</td>
<td>-0.32</td>
</tr>
</tbody>
</table>

Although the mean differences shown in this table are not identical to their HSGPA counterparts, they show the same general trend, namely, larger gaps for below average percentiles and smaller gaps for above average percentiles, with the smallest difference between SNC men and women at the 95th percentile.

The data in Table 5.2 and Table 5.3 show that the impact of the gender variable on educational attainment, as measured by GPA, depends on the level of that attainment. Men and women with above-average GPAs are more like each other (the impact of gender is reduced) than those with below-average GPAs, where the gender difference in GPA is more pronounced. This conclusion holds for HSGPA and 1st semester SNC GPA.

We turn next to a more interesting and complex example of the interaction between gender, GPA, and choice of major. What influence do does this trio of variables have on retention to sophomore year?

A Tale of Two Majors

Business Administration and Education are the two most-selected academic major choices at St. Norbert. In the 2005-2007 entering classes, for example, 29% of first year students (13% for Business, 16% for Education) reported they intended to major in these fields.

These two majors draw clearly different gender mixes. In our 2005-07 entering cohorts, 20% of men and 7% of women stated their intention to major in Business; conversely, 24% of women and 5% of men said they intended Education as their major.

Of course educational intentions can be modified. Thus, not everyone who intended to major in Business or in Education formally declared these preliminary choices as their stated major after arrival at SNC. About two-thirds of intended Business majors later indicated it was their declared major; they were joined by 10% of entering students who
had not reported Business as their *intended* major. All told, about 18% of the 1533 students in the 2005-2007 entering cohorts have Business as their *declared* major.

Somewhat similar findings obtain for Education. Sixty-five percent (65%) of *intended* Education majors continued with a *declared* major in this field, joined by an additional 4% of students who did not report Education as their *intended* major. Just over 13% of the 1,533 first year students from 2005-2007 have Education as their *declared* major.

The gender mix of *declared* majors differs somewhat from the one for *intended* majors reported above. Twenty-six percent (26%) of men have Business as their *declared* major, as do 11% of women. Twenty percent (20%) of women have Education as their *declared* major, as do 4% of men.

The top section of *Table 5.4*, below, shows the HSGPA and 1<sup>st</sup> semester SNC GPAs for *declared* Business majors vs. all other majors. The bottom section of *Table 5.4* shows the same GPAs for *declared* Education majors.

### Table 5.4. GPAs for students majoring in Business and Education compared to all other majors.

<table>
<thead>
<tr>
<th>GPA:</th>
<th>Declared Business</th>
<th>Declared All Others</th>
<th>Difference (Bus – All)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HSGPA</strong></td>
<td>3.17</td>
<td>3.36</td>
<td>-0.19</td>
</tr>
<tr>
<td><strong>1&lt;sup&gt;st&lt;/sup&gt; Sem SNC GPA</strong></td>
<td>2.75</td>
<td>3.00</td>
<td>-0.25</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GPA:</th>
<th>Declared Education</th>
<th>Declared All Others</th>
<th>Difference (Educ – All)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HSGPA</strong></td>
<td>3.44</td>
<td>3.30</td>
<td>0.14</td>
</tr>
<tr>
<td><strong>1&lt;sup&gt;st&lt;/sup&gt; Sem SNC GPA</strong></td>
<td>3.08</td>
<td>2.94</td>
<td>0.14</td>
</tr>
</tbody>
</table>

For both Business and Education, the mean differences shown in the last column are statistically-reliable. Average Business GPAs are lower than the average GPA for all other majors combined. Education GPAs are higher than the GPAs for all other majors.

These findings are consistent with our knowledge that—on average—GPAs of women are higher than those of men. *Business* is heavily populated with males, while *Education* has a predominance of majors who are women.

The gender difference in GPA persists *within* each major field as well. Women with a major in Business have about 0.30 higher HSGPAs and 1<sup>st</sup> semester SNC GPAs than do male Business majors. Women Education majors have a 0.24 GPA advantage in HSGPA over men majoring in education, and a much larger 0.52 GPA advantage in 1<sup>st</sup> semester SNC GPA. In all the above cases, the differences are statistically-reliable. If there is an interaction between academic major and gender, it does not affect the “gender gap” in *averaged* HSGPA and 1<sup>st</sup> semester SNC GPAs.
But what about each gender considered separately? Do men (and women) majoring in Business and Education have significantly different GPAs than the averages of men (and women) majoring in all other fields? *Table 5.5* shows the GPAs of 2005-2007 first year men with declared majors in Business (top section) and Education (bottom section). It begins our exploration of within-gender differences in academic achievement.

**Table 5.5. GPAs of first year men majoring in Business and Education compared to all other majors.**

<table>
<thead>
<tr>
<th>GPA:</th>
<th>Declared Business</th>
<th>Declared all Others</th>
<th>Diff (Bus – Others)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HSGPA</strong></td>
<td>3.05</td>
<td>3.19</td>
<td>-0.14</td>
</tr>
<tr>
<td><strong>1st Sem SNC GPA</strong></td>
<td>2.64</td>
<td>2.85</td>
<td>-0.21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GPA:</th>
<th>Declared Education</th>
<th>Declared All Others</th>
<th>Diff (Educ – Others)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HSGPA</strong></td>
<td>3.23</td>
<td>3.15</td>
<td>0.08</td>
</tr>
<tr>
<td><strong>1st Sem SNC GPA</strong></td>
<td>2.62</td>
<td>2.80</td>
<td>-0.18</td>
</tr>
</tbody>
</table>

Men with declared majors in Business have statistically-reliable GPAs that are lower than those for men in all other majors combined. The picture for first year men in Education is less clear. Because of the small (N = 23) number of men in this category, the differences shown do not have statistical reliability. The “reversal” from HSGPA to 1st Semester SNC GPA is intriguing but, given the uncertainty regarding its generalizability, might most prudently be left uninterpreted for now.

What is clear is that the choice of Business as a major is, for men, associated with a slightly lower average HSGPA and SNC GPA when compared to men in all other SNC majors combined. Women majoring in Business show similar trends, averaging about 0.10 GPA lower HSGPA and 0.14 lower 1st semester SNC GPA. Given the sample size, however, these differences are just “marginally” reliable (*p*=.06 and *p*=.04 respectively) and are smaller in magnitude than comparable male data. Freshman women in Education have GPAs that are nominally higher than those of women in all other SNC majors combined, but the differences do not reach traditionally-acceptable levels of statistical reliability, so we are uncertain how replicable they are.

The finding that “major makes a difference” in considerations of academic achievement (as measured by GPA) certainly does not challenge expectations based on common sense or conventional wisdom. Major choice, like gender, is a variable that helps account for differences in GPA. This variable matters more in some cases (e.g., Business) than for others (e.g., Education), just as gender matters more in some cases (below average GPAs) than in others (above average GPAs).

**The Impact of Gender & Major Choice on Retention: the Case of Business**

By now it should be clear that there is a clearly-established link between gender and GPA (although the strength of the link does, as we have shown, vary along the GPA continuum). There is also a well-established link between GPA and retention. Several studies on retention conducted by the OIE have shown repeatedly that, the higher the
GPA, the greater the likelihood that SNC students will continue to graduation, a finding consistent with results of national studies.

Is there a relationship between major choice and retention? We don’t have the answers to this question for all majors, but we can provide information on the largest major at SNC—Business.

Given the fact that Business contains a preponderance of men, that men have, on average, lower GPAs than women, and that men majoring in Business have lower GPAs than their male counterparts in other majors, the plausible hypothesis would be that Business majors, particularly male Business majors, would retain at a lower rate than students in other majors.

For the 2005-2007 pooled freshman cohort, overall retention to sophomore year was 84%. Men had 82.4% retention to second year, while women’s retention rate was 85.1%. The difference in retention rates between men and women is associated with differences in GPA; gender, in-and-of-itself, has no relationship with second year retention (the correlation between the two is 0.04—essentially zero).

Table 5.6 below shows the percentage of men and women majoring in Business versus all other majors who were retained to sophomore year.

Table 5.6. Percent 2005-2007 first year men and women Business majors versus all other majors retained to sophomore year.

<table>
<thead>
<tr>
<th>Major</th>
<th>Business</th>
<th>All Others</th>
<th>Diff (Bu – Others)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>89%</td>
<td>80%</td>
<td>9%</td>
</tr>
<tr>
<td>Women</td>
<td>88%</td>
<td>85%</td>
<td>3%</td>
</tr>
</tbody>
</table>

The nine percentage point advantage in retention favoring men majoring in Business is unexpected—and statistically-reliable. It appears that the choice of Business as a major alters the general finding regarding GPA and retention—indeed, appears to turn it on its head. Here, men averaging 0.21 SNC GPA points below their peers in other majors have a nine percentage point advantage in retention to second year.

There is a similar trend for women majoring in Business. Women Business majors in our 2005-2007 combined freshman cohort had SNC 1st semester SNC GPAs of 2.95, compared with 3.09 for all other majors—a difference of 0.14 GPA points. This “gap” is smaller than that of male Business majors, and so is the retention advantage for women—three percentage points, compared with nine for men.

These findings suggest that majoring in Business somehow neutralizes the general positive relationship between GPA and retention. They further suggest that majoring in Business increases the probability of retention to sophomore year. And they suggest that majoring in Business improves the retention chances of men more than women.

It is interesting to note the “retention advantage” for men is across the range of 1st Semester SNC GPAs. Table 5.7 below shows the percent male Business majors and All Other majors retained to second year, by GPA quintile.
Table 5.7. Percent of 2005-07 first year men retained to sophomore year, by GPA.

<table>
<thead>
<tr>
<th>GPA Quintile</th>
<th>&lt;=2.38</th>
<th>2.39-2.88</th>
<th>2.89-3.25</th>
<th>3.26-3.63</th>
<th>3.64+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>79%</td>
<td>94%</td>
<td>94%</td>
<td>96%</td>
<td>100%</td>
</tr>
<tr>
<td>All Others</td>
<td>66%</td>
<td>90%</td>
<td>92%</td>
<td>82%</td>
<td>94%</td>
</tr>
<tr>
<td>Diff (Bu-Others)</td>
<td>13%</td>
<td>4%</td>
<td>2%</td>
<td>14%</td>
<td>6%</td>
</tr>
</tbody>
</table>

It is probably prudent to avoid focusing on the magnitude of specific differences, since we don’t know the factors which account, say, for the puzzling low (82%) retention of non-Business majors in this 2005-2007 freshman sample with GPAs in the 3.26-3.63 range (resulting in a fourteen percentage point retention advantage for men majoring in Business). But the data shown do support the unexpected “across the board” retention gains for male Business majors.

**Conclusion**

The information provided in this chapter suggests that determining the role of gender in the SNC experience requires that this variable not be considered in isolation. Of course, this assertion is likely true for the study of virtually any variable, because the usual order in nature is for things to be related, not independent. That said, we intend findings from this chapter to serve as a corrective to any tendency to view the impact of gender on the student experience at SNC as unaffected by other, concurrent influences on that same experience.

The gender differences reported in earlier chapters pointed toward the general conclusion that being a woman student at St. Norbert is more strongly associated with academic behaviors and educational outcomes consensually viewed as desirable by the academic community than is true for men. This general conclusion is not overturned by findings discussed in this chapter. But its universality is challenged by them. Men shrink the “GPA gap” at the higher levels of academic achievement, for example. And men majoring in Business (SNC’s largest major) defy expectations by returning in greater numbers for the sophomore year than is “justified” by their GPAs.
Using Gender-related Research Results to Effect Changes in Educational Practices: Some Considerations

*At a time when national attention is focused on the relative numbers of women and men on college campuses, little is known about the characteristics of the two genders and how aspects of college further shape these characteristics. The popular messages are oversimplified: Gender equity has been achieved, women are an academic success story, and men are experiencing an educational crisis.*


We hope our monograph has addressed to some extent the issues raised by Dr. Sax in the quotation that opens this chapter. While not encyclopedic in scope, the findings discussed in previous chapters cover some of the important dimensions of education and gender at St. Norbert, the College’s first systematic attempt to do so. Findings from this monograph can be useful in discussions about how to enhance the educational experiences of either sex.

We agree with Dr. Sax that it is an oversimplification to assert that “women are an academic success story and men are experiencing an educational crisis.” Actually, as Dr. Sax herself notes in another *Chronicle* article (“*College Women Still Face Many Obstacles in Reaching their Full Potential*”) written September 28, 2007, almost exactly a year earlier:

Women enter college with higher levels of stress and depression, and with lower ratings of their own emotional and physical health, and those gender differences persist over four years of college. The gaps are partly a function of differences in how women and men choose to spend their time. Men in college spend more time than women do playing sports, partying, watching television, and playing video games. Women spend more time than men do studying, meeting with instructors, joining student groups, doing volunteer work, and performing household or family chores.7

It seems unlikely that faculty and administrators are prepared to encourage women to study fewer hours per week, strive for lower grades, join fewer campus organizations (except, perhaps, social ones), avoid meeting with faculty, volunteer less, or avoid family responsibilities. Rather, discussions on improving educational outcomes are more likely to focus on interventions designed to encourage more men to engage in the academically-desirable behaviors women more often do.

Of course, discussing possible gender-based educational interventions presumes there is a need for them. If indeed it is an oversimplification to view “men as experiencing an educational crisis,” as Dr. Sax asserts, is there sufficient evidence available to at least argue there are relative (but important) deficiencies in the educational experiences of SNC men (compared with SNC women) that should be addressed? If so, what does the evidence in this monograph tell us what these deficiencies might be? And what are some potentially effective interventions to reduce them?

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7 See the endnote to this chapter for a discussion of our SNC research findings on gender, stress, depression, emotional health and their association with prosocial and recreational activities.
Sidebar: Listening to Alexander Astin

Before attempting answers to these questions, it may be helpful to have some background or context. In 1977, Alexander Astin, now retired from his responsibilities as Professor of Higher Education and Director of the Higher Education Research Institute (HERI), published a landmark empirical study of higher education entitled *Four Critical Years*. By 1988, this book had become the single most frequently cited work in the higher education literature (Astin, 1993, p. xix).

In 1993 Astin published *What Matters in College: Four Critical Years Revisited*. (San Francisco: Jossey-Bass). In the Preface (p. xix), Astin noted, “As with *Four Critical Years*, the principal purpose of *What Matters in College*? is to enhance our understanding of how undergraduate students are affected by their college experiences.” Astin did so with what he described as “an entirely new study.” The study was based on analyses of data from the extensive survey archives of HERI. Despite the fifteen or so years separating the two studies, many of the student changes Astin noted in the 1977 research were replicated in his 1993 study.

The purpose of this sidebar is not to attempt a summary of Astin’s two empirical studies (although many of the analyses in this monograph are based on the same HERI surveys used by Astin), or to offer comparisons between findings from our single institution study and Astin’s multi-institutional work. Rather, we want to draw attention to some of Astin’s conclusions because of their implications for use of findings from this monograph to make educational changes at St. Norbert.

First, note this quotation about the effects peers have on student change:

Viewed as a whole, the many empirical findings from this study seem to warrant the following general conclusion: the student’s peer group is the single most potent source of growth and development during the undergraduate years (italics in original). While the importance of the peer group has been pointed out earlier by most reviewers of the voluminous research on student development,…this is the first time that research has been able to compare and contrast peer effects with effects of faculty, curriculum, and institutional type…. (Astin, *What Matters in College*?, p. 398)

Astin continues by noting that the peer group effects of most importance are those of a demographic nature, namely, gender, race, and socioeconomic status (SES). With regard to the impact of gender specifically,

…it seems clear that colleges do not serve to eliminate or even reduce many of the stereotypic differences between the sexes. That is, women enter college already differing from men in self-rated emotional and psychological health, standardized test scores, GPAs, political attitudes, personality characteristics and career plans, and most of these differences widen during the undergraduate years. Thus, even though men and women are presumably exposed to a common liberal arts curriculum and to other common environmental experiences during the undergraduate years, it would seem their educational programs preserve and strengthen, rather than reduce or weaken, stereotypic differences between men and women… A similar conclusion was reached nearly twenty years ago in *Four Critical Years*. (Astin, *What Matters in College*?, pp. 405-406)

The reason these often-reported differences between men and women students seem to persist—even increase—during college is, according to Astin, due to affiliation:

“Very simply, women are most likely to affiliate with women during college, and men are most likely to affiliate with men…. As a consequence, women are more likely to be influenced by the values and behaviors of other women, and men are more likely to be influenced by the values and behaviors of other men. Such an
interpretation is supported by the observation that virtually every gender difference observed at input widens with time (italics in original). (What Matters in College?, p. 406).

The Realities of Change Meet the Realities of Gender
The point is this: changes in curricular and cocurricular philosophies, programs, and practices designed to improve student learning outcomes must pass through the filter of gender. This filter has the power to amplify, diminish, or otherwise distort the intended impact of whatever changes are made, particularly those changes intended to directly alter gender-stereotypical attitudes, values, or behaviors.

Nor has Astin’s analysis of the power of the peer culture generally, and gender-based subcultures specifically, been made irrelevant by changes in the broader culture and higher education since the publication of What Matters. Astin’s protégée and former Associate Director of HERI, Linda Sax (who, by the way, conducted many of the statistical analyses for Astin’s 1993 book) recently published The Gender Gap in College: Maximizing the Developmental Potential of Women and Men (Jossey-Bass, 2008).

Sax’s approach to research on gender in higher education uses essentially the same statistical methodology as the Astin studies and also mines the extensive HERI database to produce what Alexander and Helen Astin describe (in their Forward to Dr. Sax’s book) as “an encyclopedic volume…destined to become a classic in the higher education literature” (The Gender Gap, p. xv). The Astins (p. xvi) note that, “What is perhaps most remarkable about Sax’s findings is the fact that more than half of the 584 different college effects that she identified are not the same for women and men!”

Of course not all of these 584 effects are of equal importance. Nor are they all equally relevant to the educational mission of St. Norbert College. Further, as Sax herself points out, “…the actual size of the gender gap tends to be quite small…[with] differences among men and women [tending] to be much larger than differences between the sexes.” (The Gender Gap, p. 8; italics in original).

Linda Sax’s point regarding the relative size of within-gender differences vs. those between the sexes is useful to keep in mind and consistent with the numerous findings presented in this monograph. Take a simple (but important) example: The “gap” in SNC GPA between men in the lowest GPA quintile and those in the highest is greater than the average SNC GPA gap between SNC men and women.

What these relative within-gender vs. between-gender differences suggest is that it is a potentially misleading overgeneralization to say that, “SNC women have higher GPAs than men” and closer to the facts to state that, “The average GPA of SNC women is higher than the average GPA of men”—a more cumbersome—but also more accurate—statement of the actual finding.

What Should SNC Do?
Many of the differences between SNC’s men and women students we describe in this monograph exist before their entrance to the College. As noted by Astin and by Sax, most of these same gender differences persist to graduation, suggesting they are robust, perhaps (as suggested by Astin) largely due to the fact that women students spend more of their time in association with other women and men spend more time with other men. Continual exposure to the norms, values, and behaviors associated with these gender-based subcultures seems to reinforce and perpetuate the many facets of the “gender gap.”
Some facets of the gender gap are problematic because they constrain the intellectual, personal, or spiritual growth of one or other gender as SNC students proceed from matriculation to graduation. That is, they make maximal fulfillment of the essential learning outcomes in the St. Norbert Mission Statement more difficult to achieve.

The College provides opportunities for students to fulfill Mission Statement learning outcomes through its curriculum, cocurriculum, and community-building activities. But these institutionally-provided opportunities will always pass through the filter of gender—the same-sex peer culture that mediates how the opportunities will be perceived, valued, and responded to.

For better or worse, this gender filter will not go away. To ignore it, to disregard its importance, will not diminish the impact it has on any attempt by the College to maximize learning outcomes for every student. It is wiser and more effective to acknowledge the influence of gender-based peer culture and find ways to work with it. Ironically, it may be that working with same sex peer culture (rather than trying to directly minimize its importance) will reduce the “gender gap” in Mission-based learning outcomes—the most important “gap” of all.

We do not have at hand a systematic catalog of curricular, cocurricular, and community-building best practices that research has shown to be effective in reducing gender differences in learning outcomes. Nor do we have the breadth of expertise that resides within the College’s various organizational Divisions and subdivisions, expertise that can be used to design and implement a variety of interventions intended to reduce gender differences in learning outcomes. But we do have a few illustrative suggestions, suggestions based on the findings of this report.

For Men…
Findings reported in this monograph suggest that the drive to achieve is important to many male students, that men are less likely to associate their academic ability with cumulative GPA, and that they are more likely to find classes boring. We also note that male Business majors retain at higher rates through the entire GPA spectrum than do men in other majors.

We assume that Business is an academic major whose course content is perceived to be directly related to immediate post-graduation employment success. In effect, business courses provide classroom practice of the knowledge and skills judged to be necessary for occupational success upon graduation. That makes them attractive for students who see academic learning as most worthwhile if it is instrumental, designed to achieve practical ends.

Internships related to post-graduation career objectives provide a very similar experience. Their attraction is that they combine action with cognitive learning and are “face valid” (i.e., are readily perceived as relevant to future career). The likelihood of boredom is less and the motivation to learn is enhanced. Further, internships should be possible option for a wide range of majors, offering men who choose academic disciplines other than Business opportunities to obtain educational benefits similar to their same sex peers in Business.
In the co-curriculum, our findings suggest men might be drawn to a leadership model that taps the need to achieve and the sense of community via athletic teams and clubs. Leadership studies in the context of goal-directed activity and competition provide a familiar segue into the larger world of leadership for community betterment. The new (2009) Community Emergency Response Training (CERT) offered through the Health and Wellness Center is another example of action-focused community service that has attracted a disproportionate number of male students to it.

*Mentoring* is a potentially important path to increased involvement in the SNC community for men (women also, of course). Ideally, a faculty advisor can work to build relationships with his or her students that extend guidance and positive influence beyond course selection and academic progress to the larger world of values for living. Actually, anyone who supervises students at the College has similar opportunities, if only they choose to take them.

Student-to-student *Mentoring* in the form of *tutoring* offers males with the necessary academic background service opportunities on and off campus. This service opportunity taps demonstrated expertise as well as willingness to help—a combination that may appear more attractive than one based primarily on tapping altruistic motivation only.

**For Women…**

Results presented in this monograph indicate that, on many positive educational indicators, more women students at SNC show greater accomplishment than their male peers. Average GPAs are higher, involvement in many facets of the SNC community is greater, and average satisfaction with the overall SNC experience is greater.

But college women, including those at St. Norbert, have repeatedly and consistently provided lower self-ratings of emotional and physical health than college men. Particularly with regard to ratings of emotional health, college women are similar to their 12th grade counterparts and to women at all life stages across most industrial countries since the mid-1980s.8

At the present time, there is no satisfactory explanation of the factors which lead to this particular gender gap. Yet it is, in our view, one of the most important relative failures in fulfillment of SNC’s Mission at the “personal” level.

To intervene appropriately in this area we must know more. Our suggestion is that *Student Affairs*, led by professionals of the *Health and Wellness Center*, initiate a research project designed to explore the possible contributors to differences in self-ratings of emotional and physical health by our male and female students. Faculty colleagues, particularly from *Natural Science* and the *Social Sciences*, are potential resources to join such a research project as well.

**Conclusion**

The suggestions above, and the information on gender that forms the core of this monograph, are designed to encourage members of the St. Norbert Community to

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become gender-knowledgeable, to discuss monograph findings with interested colleagues, and then to initiate programs (or modify existing ones) intended to improve the quality of our Mission-based learning outcomes for all SNC students.

************************************************************************
Endnote: Gender and Stress at St. Norbert
Women and men students at St. Norbert mirror their nationally-surveyed peers, with SNC women reporting more depression and feelings of being overwhelmed “by all I had to do” than SNC men. This conclusion is based on findings from over 2000 SNC seniors (N=697 men and N=1327 women) from 2000 through 2006. See Table 6.1, below.

Table 6.1. 2000-2006 SNC seniors who felt depressed in the past year.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Not at All</th>
<th>Occasionally</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>53%</td>
<td>43%</td>
<td>4%</td>
</tr>
<tr>
<td>Women</td>
<td>37%</td>
<td>58%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Overall, the gender differences in frequency of reported depression are highly reliable. The reliable differences are generated from the “Not at all” and “Occasionally” cells of the table. A significantly greater percentage of women are depressed “Occasionally,” while more senior men (over half) endorsed the “Not at all” option.

Similar, highly reliable, differences are found for the survey item, “Overwhelmed by all I had to do” in the past year, as Table 6.2 shows:

Table 6.2. 2000-2006 SNC seniors who felt overwhelmed by all I had to do.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Not at All</th>
<th>Occasionally</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>11%</td>
<td>63%</td>
<td>26%</td>
</tr>
<tr>
<td>Women</td>
<td>2%</td>
<td>53%</td>
<td>45%</td>
</tr>
</tbody>
</table>

In the table above, all cells show reliable differences between men and women. While a quarter of senior men reported they were frequently overwhelmed, almost half the women did so.

As Dr. Sax noted in her article, college women also rate themselves lower than male peers on both physical and emotional health. The survey items ask respondents to compare themselves to “other persons my age.” This reference group is somewhat vague in composition. Respondents are in no position to select random samples of peers for comparison, so it is likely they rely on their informal observations of their equally informal friendship and acquaintance groups as the basis for their ratings. We don’t even know if there are gender differences in the way such a “sampling” is conducted.

All that said, the overall differences shown in the next two tables (Table 6.3 and Table 6.4) are statistically reliable, a finding quite consistent with Dr. Sax’s analyses of archived data at the Higher Education Research Institute (HERI) at UCLA. The cells in the tables showing the largest men-women differences, by the way, also make the greatest contributions to statistical reliability.

<table>
<thead>
<tr>
<th>Self-rating</th>
<th>Lowest 10%</th>
<th>&lt; Average</th>
<th>Average</th>
<th>&gt; Average</th>
<th>Top 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>&lt; 1%</td>
<td>10%</td>
<td>53%</td>
<td>30%</td>
<td>6%</td>
</tr>
<tr>
<td>Men</td>
<td>&lt;1%</td>
<td>5%</td>
<td>33%</td>
<td>42%</td>
<td>19%</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Self-rating</th>
<th>Lowest 10%</th>
<th>&lt; Average</th>
<th>Average</th>
<th>&gt; Average</th>
<th>Top 10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>&lt; 1%</td>
<td>7%</td>
<td>45%</td>
<td>37%</td>
<td>10%</td>
</tr>
<tr>
<td>Men</td>
<td>&lt;1%</td>
<td>4%</td>
<td>28%</td>
<td>45%</td>
<td>23%</td>
</tr>
</tbody>
</table>

The first thing one might notice from both tables is that—for reasons open to speculation—the ratings from neither gender follow a classical “normal distribution.” Ratings pile up in rightmost two cells, with only about ten percent or less of the ratings in the leftmost “below average” and “lowest 10%” cells.

It is also apparent that men show more of a “Lake Wobegon” effect—with over 60% of ratings for both physical and emotional health in the two above-average categories. This compares with a range of 36% to 47% for women. This gender difference—that larger proportions of college men tend to rate themselves more favorably on socially-desirable items than do college women—is a ubiquitous finding on the HERI surveys, and just as true for SNC students as those at other institutions of higher education.

The question that has never been satisfactorily-answered is: Which gender’s ratings more closely align with objective evidence? In the chapter on Academic Achievement, for example, we noted that SNC male ratings of their “Academic Ability” were higher than those of SNC females, despite the fact that average SNC GPAs for males were lower.

On the face of it, this discrepancy between actual GPA and self-rated ability suggests some “self-inflation” on the part of men—but only if the twin assumptions are made that (1) GPA should be the defining criterion for self-rated academic ability by college students and (2) both sexes agree this is so when they rate their “academic ability.”

Assumption #1 is certainly defensible, but we have no evidence one way or the other for assumption #2. Indeed, we speculated in the Academic Achievement chapter that men could be “diluting” the importance of GPA in the self-assessment of academic ability by using additional “evidence” for that ability (e.g., “My grade on the paper I was really interested in writing for my favorite major class.”).

So, we are left with the fact that college women in general rate their physical and emotional health lower than do college men, and the fact that they report depressive episodes and periods of feeling overwhelmed at greater rates than their male peers. But uncertainty remains about how these facts should be understood or interpreted. How true is it, for example, that women’s greater engagement in socially- and educationally-desirable behaviors contributes to their correspondingly undesirable self-ratings on depression and feeling overwhelmed?

As one might reasonably assume, self-reported episodes of depression are correlated with similar self-reports of “being overwhelmed by all I had to do.” For example, only about 3% of men who reported they were “not at all” overwhelmed said they were “frequently”
depressed, while 10% of males “frequently” overwhelmed were also “frequently” depressed (corresponding percentages for women were 0% and 10%, very similar to the self-reports of men).

**Being Overwhelmed and Being a Volunteer**

However, frequency of self-reported depressive episodes is not associated with frequency of volunteer activities for women. And it has only a very slight relationship for men, if any. These findings suggest that a potentially serious mental health issue (depression) is not linked to the frequency with which one engages in volunteer activity—for either men or women.

*Feeling overwhelmed* is another matter, however. There is an association between frequency of engaging in volunteer activity and frequency of feeling overwhelmed. As an example, Table 6.5 below shows the percentages of senior men and women who “frequently” volunteer and the associated percentages of both genders who are “not at all,” “occasionally” or “frequently” overwhelmed by all I had to do.

**Table 6.5. Percent 2000-2006 frequent volunteers who are overwhelmed**

<table>
<thead>
<tr>
<th>Frequency of being Overwhelmed</th>
<th>Not at All</th>
<th>Occasionally</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>4%</td>
<td>18%</td>
<td>21%</td>
</tr>
<tr>
<td>Men</td>
<td>8%</td>
<td>11%</td>
<td>17%</td>
</tr>
</tbody>
</table>

Only 4% of women who say they frequently perform volunteer work also report they had no episodes of feeling overwhelmed, while over twenty percent report frequently feeling so. The data for men show the same trend, but with consistently lower percentages of “feeling overwhelmed.” Thus, women and men are more likely to report they were overwhelmed by all they had to do if they also (as in this example) report frequently engaging in volunteer work.

We should also note that a greater percentage of senior women (19%) than senior men (12%) say they volunteered “frequently.” Since more women than men engage in volunteer activity in the first place, and more women than men report feeling overwhelmed at every frequency level of volunteering, the association between volunteer work and feelings of being overwhelmed discussed by Sax holds for SNC students just as it does for her national samples.

However, it may well be that the men and women who frequently volunteer (shown in the table just above) are actually rather robust, at least when compared to all their same-sex peers in the 2000-2006 senior cohort. Compare the percentages in the above table with those for the entire cohort (*Table 6.2*, shown on the first page of this endnote). Only a minority of SNC women and men—21% and 17%, respectively—who report frequently volunteering also report they are frequently overwhelmed by all they had to do. However, for the entire cohort (*Table 6.2*), the comparable percentages for frequently overwhelmed are 45% for women and 26% for men.

**Emotional Health and Volunteering**

What about overall emotional health? For both senior men and senior women, there is a statistically-reliable negative relationship between the frequency of feeling overwhelmed and self-ratings of emotional health: the more frequently one feels overwhelmed, the
lower are one’s self-ratings of emotional health. Given this relationship, and the *positive* relationship between frequency of volunteering and feeling overwhelmed, it is reasonable to assume frequency of volunteering would have a negative relationship with self-rated *emotional health*. That is, the greater the frequency of volunteering, the *lower* one’s ratings of emotional health, and vice versa.

This assumption is *incorrect*! There is essentially no relationship between frequency of volunteering and self-rated emotional health for SNC men. For SNC women, there is a very *modest*, but statistically-reliable, *positive* relationship between frequency of volunteering and self-rated emotional health. *Table 6.6* below shows the percentage of SNC senior women with self-rated *below average/lowest 10%* or *above average/top 10%* emotional health who reported volunteering *not at all* or *frequently*.

### Table 6.6. Percent of 2000-2006 SNC senior women (N = 1323) who volunteer by emotional health.

<table>
<thead>
<tr>
<th>Frequency of Volunteering</th>
<th>Not At All</th>
<th>Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Average Emotional Health</td>
<td>25%</td>
<td>14%</td>
</tr>
<tr>
<td>Above Average Emotional Health</td>
<td>14%</td>
<td>21%</td>
</tr>
</tbody>
</table>

**Party Time**

Dr. Sax suggests that college men may be less stressed than women because they spend more time engaging in pleasurable recreational pursuits. This contrasts with college women, who spend more time than men in prosocial activities that often require time commitments which add to the stresses of college life. So let’s look at what is often seen as the quintessential college recreational activity—*partying*. Is it also the quintessential stress-reliever?

Without a doubt, SNC senior men and women parallel national findings regarding gender differences in time spent partying. Fifty percent (50%) of senior men in our sample report partying *six or more* hours per week; 13% of senior men reported (accurately or not) they typically partied *sixteen or more* hours a week during their senior year. Comparable figures for senior women are 35% (six or more hours) and 6% (sixteen or more hours/wk). *Table 6.7* below is a convenient reference.

### Table 6.7. Hours spent partying by 2000-2006 SNC senior men (N = 693) and women (N = 1323).

<table>
<thead>
<tr>
<th>Hrs/week partying</th>
<th>Six or &gt; hours</th>
<th>16 or &gt; hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>50%</td>
<td>13%</td>
</tr>
<tr>
<td>Women</td>
<td>35%</td>
<td>6%</td>
</tr>
</tbody>
</table>

These gender differences in time spent partying are robust and “fit” the stereotypes shown in such movies as *Animal House*. But one might keep in mind that a minority of SNC men and women (6% and 10%, respectively) report the hours per week they spent partying during their senior was *zero*. And the “typical” amount of time partying was 1-5 hrs/wk for 44% of males and 55% of females.

Whatever the motivation for—and benefits of—partying, reduction of the stress of feeling overwhelmed is not one of them. For both senior men and senior women at SNC,
the relationship between frequency of feeling overwhelmed and hours spent partying is essentially nonexistent. There is not even a negative relationship, as one might assume if the hours per week spent partying only added to “feeling overwhelmed by all I had to do.”

What about self-rated emotional health? More SNC senior men (68%) than women (47%) rate their emotional health as “above average” or in “top 10%,” as one might recall from Table 6.4 earlier in this endnote. And, as we have just seen, more men party more hours. Maybe there’s a connection?

There is not. Certainly not for men, where the correlation (Somers’ d) between self-rated emotional health and hours/week partying equals 0.010, and probably not for women, where the same correlation value is 0.081 (statistically reliable, given the large sample, but practically miniscule).

**Conclusion**

More college women than men report more episodes of depression and more times where they “felt overwhelmed by all I had to do.” This finding is not only true nationally, it applies to SNC as well.

More women than men engage in educationally-desirable activities, such as volunteer work. There is a complex connection between the frequency of volunteering and feeling overwhelmed, but there is no link between volunteering and depression. This finding holds for both women and men. Similarly, there is no association between frequency of volunteering and self-rated emotional health for men; a modest positive relationship exists for women.

More men than women rate their emotional health as above-average when compared with “other persons my age.” Again, this finding is true for national samples and for SNC. And more men than women party more hours per week. But there is no connection between hours spent partying and self-rated emotional health for men (or, very, very likely, for women either), or between partying and feeling overwhelmed.

The implication of the quotation from Dr. Sax on the first page of this chapter is that self-reported emotional health (to include feeling overwhelmed and depression) might be negatively affected by the volume of educationally- and socially-desirable activities in which a student participates during college. Similarly, emotional health might be affected positively by the amount of time engaged in pleasurable recreational activities. Examining volunteering as an exemplar of the former and partying as prototypical of the latter, we have not found strong evidence for these hypothesized relationships.

However, the general findings from national data noted by Dr. Sax regarding gender differences in self-ratings of emotional health, depression and feeling overwhelmed clearly apply to SNC as well. What is less clear, as we have just-reported, is support for the hypothesis that lower ratings of mental health by women are linked to their greater (time-consuming) engagement in prosocial activities, while the higher mental health ratings by men are associated with their greater predilection for enjoyable recreational activities.
Notes on Methodology

This monograph is primarily (but not exclusively) an exploration of differences between the sexes, and the relationships of these differences to four kinds of student learning outcomes: (1) overall academic achievement as measured by GPA; (2) self-reported increases in the strength of a variety of skills and abilities (2a), and fulfillment of Mission-related learning outcomes (2b); and (3) overall satisfaction with the SNC educational experience. It is an initial attempt to understand what a “St. Norbert Education” means to our men and women students. Findings from the monograph provide a foundation on which later explorations of the same topic can build. They also serve as a data-informed base for educational interventions designed to enhance student learning.

Our primary data sources are surveys completed by our students at different times during their SNC education: The Freshman Survey, completed during summer orientation, The St. Norbert Current Student Survey, administered annually in the first semester, and The Senior Survey, administered in April before graduation. The Freshman and Senior Surveys that “bookend” an SNC education are national surveys sponsored by the Higher Education Research Institute (HERI), available to any college or university which chooses to administer them. The Current Student Survey is an SNC-only questionnaire. Administered annually since 1993, it is designed to provide information on student perceptions regarding how well SNC is fulfilling various aspects of its educational mission.

Self-ratings: Limitations and Benefits

We realize that survey responses are indirect (weak) measures of student learning outcomes, particularly those outcomes for which there are clear and important behaviors or actions in the real world. The learning outcomes categories of “skills” or the more general “abilities” are obvious examples. Self-ratings of skills and abilities are weak substitutes at best for behavioral demonstrations of them. Such ratings are subject to a number of sources of error and distortion, weakening their accuracy. Inadequate self-knowledge, conscious and unconscious distortions intended to protect self-esteem, and social desirability are just a few of the potential sources of error that can seriously damage the credibility of self-ratings of skills and abilities, particularly at the level of the individual.

Despite these weaknesses, we believe self-ratings have a place in student outcomes research. For example, although self-ratings of skills cannot replace behavioral demonstrations as “gold standard” measures of their presence, they do provide evidence regarding student perceptions of skills and abilities. Indeed, they are direct evidence for these perceptions.

Self-perceptions of skill or ability levels, especially when grouped or averaged over individuals, provide clues regarding the relative impact of curricular or other educational interventions on student development. It is worthwhile knowing, for example, if students rate their writing skills higher than their public speaking abilities, say, or their
quantitative skills. A finding such as this encourages research to confirm it. If subsequently supported by other data, the finding then provides guidance for educational improvement.

In addition, self-ratings are suitable subjects for construct and empirical validation studies. This type of research has a long history in e.g., personality research in psychology, with well-established procedures readily available. Validation studies of self-perceptions enrich our understanding of the interplay between the interior world of students and the external academic and social dimensions of the college environment in which they live.

Finally, it should be noted that major, widely-respected, research studies on student development during college have typically relied heavily (sometimes exclusively) on student self-reports. Research by Alexander Astin and associates at the Higher Education Research Institute (HERI) at UCLA and George Kuh and associates at Indiana University with the NSSE are just two exemplars of researchers who rely on self-report data from standardized surveys.

**The Role of Satisfaction in Outcome Studies**

Finally, some comments on satisfaction as an educational outcome worthy of report and serious discussion. Satisfaction is not a standard learning outcome and is an even weaker substitute than self-ratings for assessment of academic and cognitive abilities. The widely-revered “critical thinking” is an easy example. Asking students how satisfied they might be with their level of critical thinking yields an answer that sheds little or no light on their actual (demonstrable) ability to “think critically.” It’s not worth asking for this purpose.

But satisfaction as an affective educational outcome deserves respect and assessment. As a measure of the degree to which student expectations for their college experience have been met, it is without peer. In his 1993 *What Matters in College: Four Critical Years Revisited*, Alexander Astin argues:

> Given the considerable investment of time and energy that most students make in attending college, their perceptions of the value of that experience should be given substantial weight. Indeed, it is difficult to argue that student satisfaction can be legitimately subordinated to any other educational outcome (p. 273).

One need not accept Astin’s comments wholeheartedly to recognize the importance of satisfaction as an important outcome, one with ‘real-world’ implications. Businesses have long-recognized that high “customer satisfaction” contributes to loyalty and subsequent sales. It is, therefore, to be cultivated and monitored, since it encourages long-term relationships that enhance institutional longevity and viability (alumni and development offices, take note).

High overall satisfaction is an indicator that “we are doing something right.” More detailed satisfaction studies point to what components of overall satisfaction contribute most to this desirable global outcome. The detailed follow-up is important, since it helps differentiate “important” satisfactions from those of lesser relevance. It is likely, for example, that satisfaction with one’s major will be of more significance to overall
satisfaction with one’s college or university than will satisfaction with parking, even if both are rated identically, satisfaction-wise.

As a tool for institutional self-study and data-informed actions for improvement, the assessment of overall satisfaction and its contributing components can take its important place alongside student self-ratings of abilities and strengths. And as a global measure of the degree to which student expectations for their education have been met and their institutional loyalty affirmed, it has no peer.
Afterward

by Karlyn Crowley

Around campus I frequently hear faculty and staff talk about the fact that female students at St. Norbert are doing better scholastically than male students. Statistically, it’s mostly true. We see this scholastic disparity in the fascinating “Gender Matters: the Educational Experiences of Men and Women Students at St. Norbert” report. But before we push to declare one problem solved and another one pressing, I want to take this moment to reflect. First, a story.

Many of you have heard me talk about my beloved alma mater, Earlham, a Quaker liberal-arts college in Indiana. Yet, I didn’t start college there; I began at a woman’s college in the South. I chose this woman’s college because it had a reputation for being the “smartest” or most “intellectual” of the southern women’s colleges. When I arrived, sure, the women were “smart” in that they had gotten good grades and high test scores in high school; they continued, by and large, to perform well in college. They studied hard and did their homework. But there was no intellectual climate to speak of. Few students met to talk about ideas or watched films together or carried classroom conversations outside of class. Few women I knew had big dreams, wanted to solve pressing problems, or make a mark, large or small. Mostly, they obsessed about the men’s colleges nearby and spent their week preparing for the weekend. As my first days there became months and the college life I had dreamed of started to feel like an extension of high school superficiality and pettiness, I became depressed. I left.

For me, it was an early gender lesson. The “smart” women I thought I would encounter were not “intellectual.” It was a distinction that I couldn’t make until I had experienced it. But it’s a world of a distinction: self-identifying as intellectual, claiming one's education for oneself, and taking oneself seriously as a thinker, are all signs of someone who cares about ideas. This distinction—between smart and intellectual— is at the heart of interpreting the data regarding female students. And it is at the heart of what I have observed from 7 years in the classroom at St. Norbert. I find so many of our female students to be smart, but far fewer who passionately identify as thinkers and intellectuals. Encouragingly, if those female students are pushed, they often come slowly to internalize their learning a bit more, make it theirs, and claim an identity as a thinking agent. But it frequently takes a push.

Should that surprise us? In many ways, no. Much of the “Gender Matters” report says to me that most young women and men are acting out of fairly predictable gender role norms and expectations. I fear that young women are often more likely to be concerned in class with “appropriate” feminine behavior of being polite, quiet, kind, studious, reliable, and acquiescent to authority. We often reward that kind of compliance. Most female students tend not to question, prod, urge, push, fight, and engage—all acts that seem “too aggressive” perhaps “too manly,” but in reality are simply great intellectual traits regardless of gender. On the one hand, our female students are succeeding—the data tells us that; on the other hand, what becomes of their success?
I ask because you, my colleagues, tell me frequently of female students who could go on to graduate school, but they don’t have the confidence to fill out the application or they say they choose a family first or maybe they just slowly fade away from their mentoring networks never to be heard from again. These female students mirror a national trend some have called the “opt-out” revolution for the number of highly-educated women who are either leaving the workforce in droves or getting educated and then never joining it (see Lisa Belkin’s New York Times article among others). Linda Hirschman’s controversial manifesto Get to Work (that I assign in class) argues vehemently that women do social harm and cannot live a “good and worthy life” without meaningful work, and they’d better get to it rather than retreating to the private sphere. What multiple recent studies seem to suggest is that strong academic performance at the undergraduate level does not tell the full story of whether or not women succeed vocationally over the course of their lives.

“Gender Matters” tracks this interesting trend for female students to a) privilege family/marriage as important in college and b) help others. Please don’t misunderstand me—there is nothing "wrong" with either of these desires. But what I hear through anecdote is that, again, while women perform well, they often value relationships/others (marriage?) over their own intellectual pursuits as doers in the world. I encourage us to track this thread. Are we turning out smart female students who, ultimately, retreat to a private universe rather than put their smartness to work publicly changing the world (as is our mission) and as they seem to want to (highly valuing helping others). Again, this is not to say that one does not change the world in the domestic sphere, but then we are talking partly about "Republican Motherhood," a concept that Abigail Adams promoted but chafed against—raising good citizens rather than being a great citizen oneself.

I first took Introduction to Women’s Studies when I was 19 years old, and my professor assigned what has become one of my favorite essays, Adrienne Rich's “Claiming an Education.” Though written as a convocation speech to a woman’s college in 1977, it remains painfully prescient. Rich urges female students to “claim” not just “receive” an education by taking responsibility for it. I quote from it here at length because I find this section so crucial:

Responsibility to yourself means refusing to let others do your thinking, talking, and naming for you; it means learning to respect and use your own brains and instincts; hence, grappling with hard work. It means that you do not treat your body as a commodity with which to purchase superficial intimacy or economic security; for our bodies to be treated as objects, our minds are in mortal danger. It means insisting that those to whom you give your friendship and love are able to respect your mind. It means being able to say, with Charlotte Bronte's Jane Eyre: "I have an inward treasure born with me, which can keep me alive if all the extraneous delights should be withheld or offered only at a price I cannot afford to give."

Responsibility to yourself means that you don't fall for shallow and easy solutions—predigested books and ideas, weekend encounters guaranteed to change your life, taking "gut" courses instead of ones you know will challenge you, bluffing at school and life instead of doing solid work, marrying early as an escape from real decisions, getting pregnant as an evasion of already existing
problems. It means that you refuse to sell your talents and aspirations short, simply to avoid conflict and confrontation. And this, in turn, means resisting the forces in society which say that women should be nice, play safe, have low professional expectations, drown in love and forget about work, live through others, and stay in the places assigned to us. It means that we insist on a life of meaningful work, insist that work be as meaningful as love and friendship in our lives. It means, therefore, the courage to be "different"; not to be continuously available to others when we need time for ourselves and our work; to be able to demand of others--parents, friends, roommates, teachers, lovers, husbands, children--that they respect our sense of purpose and our integrity as persons.

Rich’s provocative call here is, to me, about vocation, about living out one’s call for a greater good—not just living for someone else, but loving ideas that liberate all of us. In class, I follow up the reading with these questions

- Do you feel that you are claiming an education or receiving one?
- Thinking about Adrienne Rich’s call, what do you use to distract yourself or take yourself less seriously?
- Do you think of yourself as an intellectual? Why or why not?
- What is meaningful work to you? Is it as meaningful as “love and friendship” in your life—why or why not?

What do female students say? They mostly tell me that no one has asked them these questions before. They tell me that to be an intellectual sounds strange, haughty, “other.” I would argue that while women are performing better at St. Norbert, they are not taking themselves more seriously as intellectuals and thinkers. I would argue that it is not accidental that we see low self-esteem scores for female students in the survey—these two things are related. Feeling confident as a thinker is related to good self-esteem.

My fear is that women's climate may be overlooked since they seem to be performing "well" academically while men are struggling. I hope we don’t fall for that easy conclusion. I hope we ask ourselves how do we push our women? Our men? Do we allow them to stay in comfortable, traditional gender roles that don’t ask more from them? For example, do we ask and expect our men to be empowered through sensitivity, compassion, and connection or do we think that to speak to men we must rely on even greater hyper-masculine appeal to meet them where we imagine they are? What I see from this survey is that, by and large, women and men at St. Norbert are living out fairly rigid gender role behaviors. And how we respond to that is the next question.

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What’s wrong with the guys? Why are schools more hospitable towards women? Has the Academy become lost for men? These sort of questions often surround important reflections like “Gender Matters: the Educational Experiences of Men and Women Students at St. Norbert.” For me, none of these questions, or those of the like, are suitable for reflecting on the differences between male and female students’ experiences at St. Norbert College.

Much praise should be extended to the authors of this critical analysis of St. Norbert College. Far more hours than I can imagine have been poured into this document, but a critical piece going forth is how we process and discuss the information presented. To truly appreciate what this information can mean for the St. Norbert College community, a constructive and creative discussion must be had.

As noted, differences are being focused on as men and women are more alike in their experiences here at St. Norbert, these differences are still worthy of attention. One cannot engage with the information presented in “Gender Matters” without noting that despite women in general achieving higher G.P.A’s than men, women also report higher episodes of depression and feeling overwhelmed. Indeed, we recognize that the college is not ideal for any demographic.

The discussion of men’s underperformance in schools is not entirely new. Individuals like Christina Hoff Sommers have earned their living suggesting a sort of “War Against the Boys” in education, but I believe this process is theoretically too simplistic. Recognizing the complexity of this monograph we cannot rely on limited and simplistic discussions that assume the academic success of one group is predicated on the failure of the other.

What strikes me as being most reflective in this monograph are men and women’s self ratings of academic ability compared to their peers. We see that entering students have similar self-ratings of academic ability, regardless of gender, but by the time these students are seniors a gender gap is present. Women who rate themselves in the “top 10% when compared with others my age” drops from freshman to senior year, while that of men rises. When put into conversation with the conclusion that college women “provided lower self-ratings of emotional and physical health than college men,” and that men have a heightened drive to achieve, I see a remarkably traditional performance of gender happening at St. Norbert College.

Michael Kimmel, one of the leading researchers and writers on men and masculinity takes this issue on directly in his book Guyland: The Perilous World Where Boys Become Men. Kimmel notes how a traditional performance of gender have women suppress ambition and men inflate it. The presence of inflated ambition and perception of academic ability among men, and the associated suppression by women, is for me an extremely traditional performance of gender happening right here at St. Norbert College.
What Kimmel notes, and I echo, is that gender stereotypes related to education hurt both women and men.

Furthermore, what I see is that men are simply becoming savvier with what they need to do to “make it,” and for many it might not mean academic excellence. Often I find men going to great lengths to project a sense of “having it all together.” From emotional health, to leadership capabilities, academic standing, one’s relationships and plans for after college must each always remain unquestionably in order. I believe this is a traditional device of hegemonic masculinity, an act of making sure to always exude an aura of personal strength and prowess. For men to show anything else is to admit weakness. Within the context of academic performance, as educators of the college I believe we are responsible to draw the best from our students amidst a very traditional performance of gender. Therefore, my hope going forth is that we may challenge students to go beyond confines of traditional gender roles and help create spaces where intellectualism and academic excellence can be fully celebrated.

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References


