

**Review of Findings from
2002 National Survey of Student Engagement Report for
First-Year Students at
Worcester Polytechnic Institute**

Report prepared by Paula Quinn
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Executive summary revised 1/17/03

The Executive Summary which follows from the full Quinn report reviews the five 2002 NSSE performance Benchmarks for WPI first-year students as well as their responses to 14 specific NSSE questions previously selected as evidence of the need to improve the WPI first-year experience.

Conclusions important for curriculum review in this report include:

- All five WPI 2002 Benchmark scores were better than the WPI 2001 scores and better than the Doc-Intensive 2002 scores.
- Out of all Doc-Intensive institutions in 2002, WPI had the best performance in the area of Student-Faculty Interactions.
- Nonetheless, WPI's lower-than-AITU scores for the Benchmarks "Active and Collaborative Learning" and "Level of Academic Challenge" indicate that in terms of coursework or classroom activities, as in 2001, 2002 first-year WPI students report they were not being stimulated to the same extent as their peers at other AITU institutions.

EXECUTIVE SUMMARY

This report summarizes and interprets findings from the following two data sources as obtained and produced by the National Survey of Student Engagement (NSSE):

1. the 2002 Institutional **Benchmark** Report (benchmark report) and
2. student responses on **14 selected questions** from the full College Student Report 2002 (2002 survey).

The **benchmark** report characterizes student performance according to the following NSSE-defined National Benchmarks of Educational Practice (areas of educational practice):

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

Each area of educational practice represents a cluster of responses to specific questions about educational practices and activities that were derived from the 75 items that are on the full 2002 survey. As a group, the areas of educational practice encompass 40 survey items. (Student-Faculty Interactions comprises six items, Active and Collaborative Learning comprises seven items, Level of Academic Challenge comprises eleven items, Supportive Campus Environment comprises six items, and Enriching Educational Experiences comprises ten items.) **Benchmark** scores provide a general indication of an institution's performance.

Insights into specific aspects of student experience may be obtained through examination of responses to individual survey items. This report examines student responses to **14 selected questions**. These questions were identified as items of interest because, on the College Student Report 2001 (2001 survey), WPI students performed more poorly on half of them when compared to AITU students. This poorer performance had helped to prompt the creation of the WPI First Year Task Force with its charge to find ways to create better opportunities for WPI first-year students to engage more in these beneficial educational practices. The **14 selected questions** are listed below under the category headings of "class preparation," "academic experiences," "challenge – motivational and mental/intellectual," and "communication skills." (Ten of the **14 selected questions** also factor into benchmark scores. Each of the 14 selected questions that contributes to a benchmark score is identified as such through footnotes.)

14 selected questions

Class preparation

- About how many hours do you spend in a typical 7-day week preparing for class (studying, reading, writing, rehearsing, and other activities related to your academic program)?¹
- In your experience at your institution during the current school year, about how often have you done . . . the following? Came to class without completing readings or assignments

Academic experiences

In your experience at your institution during the current school year, about how often have you done each of the following?

¹ This item contributed to the benchmark score for the area of educational practice called "Level of Academic Challenge."

- Asked questions in class or contributed to class discussions²
- Made a class presentation²
- Worked with other students on projects during class²
- Discussed ideas from your reading or classes with faculty members outside of class³
- Worked on a paper or project that required integrating ideas or information from various sources

Challenge
motivational

- In your experience at your institution during the current school year, about how often have you done . . . the following? Worked harder than you thought you could to meet an instructor's standards or expectations¹

mental/intellectual

During the current school year, to what extent has your coursework emphasized the following mental activities?

- Analyzing the basic elements of an idea, experience, or theory such as examining a particular case or situation in depth and considering its components¹
- Synthesizing and organizing ideas, information, or experiences into new, more complex interpretations and relationships¹
- Making judgments about the value of information, arguments, or methods such as examining how others gathered and interpreted data and assessing the soundness of their conclusions¹
- Applying theories or concepts to practical problems or in new situations¹

Communication Skills

To what extent has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

- Writing clearly and effectively
- Speaking clearly and effectively

This report includes the following sections, all of which pertain only to first-year students:

- a comparison of 2001 and 2002 benchmark report findings for Worcester Polytechnic Institute (WPI) students
- an examination of actual 2002 benchmark report findings for WPI relative to expected findings for 2002
- a comparison of WPI student responses on fourteen specific items from The College Student Report 2001 (2001 survey) and the 2002 survey
- a comparison of 2002 benchmark report findings for WPI students with 2002 findings for students from 1) other Association of Independent Technical Universities (AITU) institutions and 2) other institutions belonging to the Carnegie Classification "Doctoral/Research Universities – Intensive" (Doc-Int)
- a comparison of responses on fourteen specific items from the 2002 survey for WPI students with 2002 responses for students from 1) other AITU institutions and 2) other Doc-Int institutions.

² This item contributed to the benchmark score for the area of educational practice called "Active and Collaborative Learning."

³ This item contributed to the benchmark score for the area of educational practice called "Student-Faculty Interactions."

Because raw data were not available, it was not possible to test for the statistical significance of differences in raw benchmark scores. (Raw data are available only from each individual institution, and the NSSE/AITU collaborative has not shared their raw data internally.) Any differences in scores on individual survey items that are reported were statistically significant unless otherwise noted.

The interpretation of WPI 2002 NSSE data for first-year students differs depending on the reference group. WPI performed excellently relative to WPI 2001 scores and relative to Doc-Int 2002 scores, producing benchmark report scores for 2002 in all five areas that were better when compared to WPI 2001 scores and to Doc-Int 2002 scores. WPI performed well relative to AITU 2002 scores, producing scores that were better in the areas of Student Interactions with Faculty and Enriching Educational Experiences, producing scores that were slightly better in the area of Supportive Campus Environment, and producing scores that were slightly worse in the areas of Active and Collaborative Learning and Level of Academic Challenge. WPI performed well relative to 2002 expected scores for WPI in the areas of Student-Faculty Interactions, Enriching Educational Experiences, and Supportive Campus Environment, but it performed quite poorly relative to 2002 expected scores for WPI in the areas of Active and Collaborative Learning and Level of Academic Challenge.

The following are specific points of interest regarding **WPI performance between 2001 and 2002:**

- Between 2001 and 2002, out of all five areas of educational practice, the area of Student-Faculty Interactions showed the greatest increase in benchmark score in terms of percentages.
- In 2002, WPI students reported discussing ideas from their readings or classes with faculty members outside of class more than they had reported it in 2001.
- In 2002, WPI students reported making class presentations more than they had reported making them in 2001.
- When ranking WPI raw benchmark scores for all five areas of educational practice, Active and Collaborative Learning ranked lowest in 2002.
- In 2002, WPI students indicated that their coursework emphasized critical thinking and application more than students in 2001 did.
- Out of all five areas of educational practice, the area of Supportive Campus Environment showed the largest increase in raw benchmark score from 2001 to 2002.
- While Enriching Educational Experiences showed the least amount of improvement from 2001 to 2002, it received the highest benchmark score out of all five areas of educational practice in both years.

The following are specific points of interest regarding **WPI actual 2002 performance compared to WPI expected 2002 performance:**

- WPI actual performance was better than expected in the areas of Student-Faculty Interactions and Enriching Educational Experiences. (Both areas were better to the same extent.)
- WPI actual performance was slightly better than expected in the area of Supportive Campus Environment.
- WPI actual performance was much worse than expected in the areas of Active and Collaborative Learning and Level of Academic Challenge. Performance was worst in the area of Level of Academic Challenge.

The following are specific points of interest regarding the **2002 performance of WPI as compared to the 2002 performance of other AITU institutions:**

- WPI's lower-than-AITU scores for the areas of Active and Collaborative Learning and Level of Academic Challenge indicate that in terms of coursework or classroom activities 2002 first-year WPI students were not being stimulated to the same extent as their cohorts at other AITU institutions were.
- When compared to AITU students, WPI students worked with other students on projects during class moderately less often, made class presentations slightly less often, and asked questions in class or contributed to class discussions slightly less often.
- When compared to AITU students, WPI students reported spending slightly less time preparing for class.
- WPI students' reported tendency to work harder than they thought they could to meet an instructor's standards or expectations was not as strong as that of AITU students.
- WPI's higher-than-AITU scores for the areas of Student Interactions with Faculty, Supportive Campus Environment, and Enriching Educational Experiences indicate that outside of the classroom, in areas such as developing relationships with faculty members, having valuable experiences, and receiving personal support, 2002 first-year WPI students had better lives as students than their AITU counterparts did.

The following are specific points of interest regarding the **2002 performance of WPI as compared to the 2002 performance of other Doc-Int institutions:**

- Out of all Doc-Intensive institutions in 2002, WPI had the best performance in the area of Student-Faculty Interactions.
- When compared to Doc-Int students, WPI students reported discussing their ideas from their reading or classes with faculty members outside of class slightly more often.
- When compared to Doc-Int students, WPI students reported spending slightly to moderately more time preparing for class.
- When compared to Doc-Int student responses, WPI student responses indicated that WPI coursework was moderately better at emphasizing application and slightly better at emphasizing both analysis and synthesis.
- The extent to which WPI students reported that their coursework emphasized critical thinking skills was slightly weaker than that reported by Doc-Int students.
- WPI students' reported tendency to work harder than they thought they could to meet an instructor's standards or expectations was not as strong as that reported by Doc-Int students.
- Despite WPI students' higher benchmark score in the area of Active and Collaborative Learning when compared to Doc-Int students, WPI students reported doing each of the following in-class activities slightly less often than did Doc-Int students: working with other students on projects during class, making a class presentation, and asking questions in class or contributing to class discussions.
- When compared to Doc-Int students, WPI students indicated their institution aided them less in developing communication skills. The difference between groups was large regarding writing and was moderate to large regarding speaking.