

HICC Assessment Report Results of the 2005 Sophomore Survey

This is the second year of implementation of the Horizontally Integrated Core Curriculum (HICC), which calls for all courses in the Core Curriculum to add instruction or experiences in at least one performance-based skill and one contextual understanding. To determine the effectiveness of the new Core, the College continues with its assessment plan including national surveys administered to freshmen and seniors as well as an in-house survey administered to students at the end of their sophomore year, at which point most student have completed the Core. This report describes the in-house Sophomore Survey, presents the results of this assessment, and discusses the findings in light of goals for the HICC in particular and the College in general.

Method

The main component of the College's HICC assessment plan is an in-house survey administered to students at the end of their sophomore year. This instrument was drafted and refined by the Assessment Committee, with input from the Curriculum Committee, and administered to sophomores in April 2005, by offering a candy bar to those who completed the instrument. The instrument is two pages in length and consists of four sections (see Appendix A).

The first section consists of nine items related to learning activities students may have engaged in or experiences that they may have had. The second section consists of 15 items that ask students to report changes in a variety of skills and knowledge. The third section contains seven items measuring students' perceptions of the quality of their relationships with members of the HMC community and the level of support they receive from the College. The final section

contains six items addressing students' plans regarding study abroad. Ninety sophomores completed the questionnaire.

Results

2005 Sophomore Survey Results

Quality of education. One item on the Sophomore Survey asks students to evaluate the overall quality of their educational experience at HMC on a scale ranging from 1 (poor) to 4 (excellent). Students were quite satisfied with their experience at HMC ($M = 3.55$). On average, students felt that their educational experience was "good" or "excellent." Indeed, fewer than 5% of respondents reported that their experience was less than "good."

HICC skills. In the first section of the questionnaire, students indicated the number of courses at HMC in which they have engaged in various learning activities and experiences on a scale ranging from 0 (in no courses) to 5 (in 5 or more courses). For the second year in a row, students reported working with other students on class projects as the most frequently occurring of the learning activities assessed ($M = 3.78$). On average, students reported collaborating with their peers in about 4 courses. Given that students have taken approximately 20 courses by the end of their sophomore year, these findings suggest that students worked with other students as part of their coursework in roughly 20 percent of their courses.

The next most common activities reported were working on assignments that involved making judgments on the validity of information ($M = 3.21$, in about 3 courses) and working on assignments that involved synthesizing information in more complex ways ($M = 3.19$, in about 3 courses). That is, sophomores reported that they had engaged in these activities in over 15 percent of their courses so far. The least common activity reported was the inclusion of diverse perspectives in class discussions or assignments ($M = 2.27$, in about 2 courses) and having the

opportunity to serve as a leader in class ($M = 2.38$, in more than 2 courses). In general, the above findings suggest that students perceive that they have engaged in HICC related activities in multiple Core courses, although some activities were clearly more frequent than others. The means for all nine HICC related skills are reported in Table 1.

As in the 2004 Sophomore Surveys, there again was considerable variability among students in their estimations of the frequency of the various learning activities. For all of the learning activities, student responses ranged from zero to five. Assuming that students have taken most of the same Core courses and have had approximately the same learning experiences, then obviously students have different perspectives on what constitutes a given experience. As was suggested in the 2004 report, it may be useful to compare students' estimates to what instructors report doing in their Core courses.

In the next section of the questionnaire, students rated their own progress on various learning outcomes on a scale ranging from 1 (much weaker) to 5 (much stronger). The means for these 14 individual items are reported in Table 1. However, for ease of interpretation the items measuring learning outcomes were grouped into scales for all further analyses. Scale items and means are reported in Table 2. Students reported the greatest improvement on the scale measuring critical thinking and problem-solving skills ($M = 4.49$). This scale contained three items. On average, students felt that their critical thinking and problem-solving skills had become "stronger" or "much stronger" since beginning college. Indeed, almost all respondents reported improvement in these skills (ratings of "stronger" or "much stronger") with only 3% reporting "no change."

Students also reported solid improvement on the scale measuring their understanding of the interactive influence between society and science/technology ($M = 4.05$). This scale

contained two items. On average, students felt that their understanding of the interaction between science and society had become “stronger” since they started college, with a little less than 90% of students reporting improvement.

The next scale, containing four items, measured students’ collaboration and leadership skills ($M = 3.85$). Students also showed improvement on this scale, reporting that on average their collaboration and leadership skills had become “stronger” since beginning college. However, perceptions of improvement were not unanimous, with nearly 20% of students reporting “no change.”

The last scale, containing four items, measured students’ knowledge and respect for differences in ethnicity, culture, perspective and beliefs ($M = 3.58$). On average, students felt that their appreciation of diversity had remained the same or become “stronger” since they started college. Sixty-five percent of students reported improvement in these areas, with almost all of the remaining 35% reporting “no change.”

Finally, the remaining two items were analyzed individually. On average, students reported that they experienced “no change” in their public speaking ability ($M = 3.27$) or in their writing skills ($M = 3.30$) since beginning college. In terms of public speaking skills, over 40% of students reported improvement, over 40% reported no change, and over 15% reported a decline in these skills. For writing skills, about 50% of students reported improvement, while nearly 30% reported no change and over 20% reported a decline in these skills. These results suggest that many students feel their college education simply is not helping them improve their communication skills.

A series of regressions analyses were conducted to determine the extent to which the various learning activities assessed in the first section of the questionnaire predict each learning

outcome assessed in the second section of the questionnaire. In the first analysis, the learning activities from section one were used to predict students' critical thinking and problem-solving skills. Six of the nine learning activities were significantly positively correlated with students' critical thinking and problem-solving skills (see Table 3). It is particularly worth noting that critical thinking and problem-solving skills were correlated with receiving helpful feedback from the instructor, working on assignments that involved synthesizing information in more complex ways, and with working on assignments that involved making judgments on the validity of information. However, only working on assignments that involved synthesizing information in more complex ways made a unique contribution to predicting critical thinking and problem-solving skills. In other words, only this learning activity has predictive value above and beyond what can be predicted by the other eight learning activities.

In the next analysis, the learning activities were used to predict students' understanding of the interactive influence between society and science/technology. Four of the learning activities were significantly positively correlated with students' understanding of the interaction between science and society (see Table 4). Particularly, understanding of the interaction between science and society was correlated with considering how societal factors influence the practice of science and with considering how science might impact society. But again, only considering how societal factors influence the practice of science made a unique contribution to predicting understanding of the interaction between science and society.

Next, the learning activities were used to predict students' collaboration and leadership skills. All but one of the learning activities were significantly positively correlated with students' collaboration and leadership skills (see Table 5). Principally, collaboration and leadership skills were correlated with working with other students on projects and with having the opportunity to

serve as a leader. Still, only working with other students made a unique contribution to predicting collaboration and leadership skills.

In the next analysis, students' knowledge and respect for differences in ethnicity, culture, perspective and beliefs were predicted. Six of the learning activities were significantly positively correlated with students' appreciation of diverse perspectives (see Table 6). It is particularly worth noting that appreciation of diverse perspectives was correlated with inclusion of diverse perspectives in discussions and assignments, and with working with other students on projects. However, none of the learning activities made a unique contribution to predicting students' appreciation of diverse perspectives. Furthermore, the regression was not significant, indicating that these nine learning activities as a whole did not predict students' appreciation of diverse perspectives. These results suggest that none of the learning activities measured had much of an impact on students' knowledge and respect for diversity.

Finally, the learning activities were used to predict public speaking and writing skills, respectively. Seven of the learning activities were significantly positively correlated with students' public speaking skills (see Table 7), particularly making an oral presentation. But making an oral presentation was the only learning activity to make a unique contribution to public speaking skills. Four of the learning activities were significantly positively correlated with students' writing skills (see Table 8). Both making an oral presentation and receiving helpful feedback from an instructor made unique contributions to predicting writing skills.

As previously mentioned, one item on the Sophomore Survey asked students to evaluate their overall educational experience at HMC. The learning experiences and the learning outcomes, respectively, were used to predict student evaluations of their educational experience. Again, most of the learning activities and outcomes were positively correlated with students'

ratings of the quality of their experience at HMC (see Tables 9 and 10). However, only a few activities and outcomes made unique contributions to predicting student evaluations of their college experiences as a whole. Receiving helpful feedback and working on assignments that involved synthesizing information in more complex ways uniquely predicted student evaluations of the whole experience. Similarly, student evaluations were uniquely predicted by their ratings of their writing skills and their critical thinking and problem solving skills. Students were more satisfied with their learning experience as they perceived greater improvement in their writing, critical thinking, and problem solving skills.

Support and relationships. In the third section of the questionnaire, students rated the support they received at HMC on a scale ranging from 1 (very little) to 4 (very much). They also rated the quality of their relationships with other students, faculty, and staff on a scale ranging from 1 (unfriendly and unsupportive) to 7 (friendly and supportive). The means for these six individual items are reported in Table 1. However, for ease of interpretation these items were grouped into scales for all further analyses. Scale items and means are reported in Table 2.

On average, students reported receiving moderate support for academic, non-academic, and social success ($M = 2.72$ on a 4-point scale). This scale contained three items. However, nearly 40% of respondents reported receiving inadequate (“very little” or “little”) support from HMC. In contrast, students on average felt very positively about their relationships with other students, faculty, and staff ($M = 6.10$ on a 7-point scale). This scale contained 3 items. Over 90% of respondents reported having friendly and supportive relationships with others on campus (responses of 5, 6, or 7).

As with the learning experiences and outcomes, students’ perceptions of supportiveness and quality of relationships were used to predict students’ evaluations of their overall educational

experience at HMC. Both perceptions of supportiveness and quality of relationships positively related to student evaluations and both uniquely predict student evaluations (see Table 11).

Study abroad. In the final section of the questionnaire, students were asked if they intended to study abroad when they matriculated at HMC and whether or not they presently intend to study abroad. About 30% of respondents intended to study abroad when they entered HMC. The most common reason that students wanted to study abroad was to have new and exciting experiences. Several students also expressed an interest in getting away and taking a break from HMC for a while. Aside from simply having a positive experience, many students saw genuine educational value to studying abroad. Some students wanted to learn more about science education in other countries, while others wanted to improve their language skills. Nearly 60% of those students still had plans to study abroad at the end of their sophomore year. For those who changed their mind and decided not to study abroad, common reasons included the complications of working out course scheduling, and juggling time commitments such as research and employment. Many students seemed to feel that it would not possible to graduate on time or in good standing if they took a semester abroad. Of those who did not intend to study abroad when they entered HMC, almost 20% had changed their minds by the end of their sophomore and were making plans to study abroad.

Longitudinal Results

One way of assessing the College's progress toward its HICC goals is to conduct longitudinal analyses looking for changes in the sophomore survey data over the last several years. As previously noted, the current form of the Sophomore Survey was administered in 2004 (N = 101) and in 2005 (N = 90). An abbreviated form of the survey, including only the first two sections assessing learning activities and outcomes, was administered in 2003 (N = 24). Unlike

the longitudinal analyses reported in the 2004 HICC Report, analyses comparing the data for these three years *do not* track student progress throughout their tenure at HMC. Rather, these analyses track the progress of the institution over several cohorts of students.

There are few significant differences in students' reports of the frequency of various learning activities over the years. Similarly, there are few differences in students' ratings of their learning outcomes. Respondents in 2004 reported making oral presentations in significantly more classes ($M = 4.45$, in 4 or 5 or more courses) than did 2003 respondents ($M = 3.83$, in about 4 courses). However, the average number of classes including oral presentations declined again in 2005 ($M = 3.86$, in about 4 courses). The results of the longitudinal analyses on learning activities and outcomes are presented in Table 12.

However, results suggest encouraging progress in the consideration and understanding of the interactive influence between society and science. Respondents in 2005 reported significantly more frequent consideration of the influence of society on science ($M = 3.60$, in 3 or 4 courses), and greater consideration of the influence of science on society ($M = 3.83$, in about 4 courses) than did 2003 respondents ($M = 2.58$, in 2 or 3 courses and $M = 2.79$, in about 3 courses, respectively). Similarly, respondents in 2005 reported significantly greater understanding of the interaction between society on science ($M = 4.05$) than did 2003 respondents ($M = 3.57$) or 2004 respondents ($M = 3.87$). These results suggest that instructors have made steady progress in addressing the interaction between science and society in the Core curriculum, and that these efforts have been effective in increasing student understanding.

Data regarding students' ratings of the support they received at HMC, the quality of their relationships with other students, faculty, and staff, their intentions to study abroad, and the overall quality of their educational experience were available for only the last two years. Hence,

it was not possible to conduct trend analyses on these variables. Instead, t-tests were conducted to look for differences in students' responses between the two years (see Table 13). There was no difference in perceived supportiveness, quality of educational experience, or intentions to study abroad. However, 2005 respondents reported that their relationships with other students, faculty, and staff were significantly less friendly and supportive than 2004 respondents (Difference = .05 on a 7-point scale). Although this difference is statistically significant, it is quite small. Hence this is presently not a cause for great concern, but student ratings of relationships should be carefully observed in the future.

Conclusions

The present findings provide room for optimism in terms of the effectiveness of the new Horizontally Integrated Core Curriculum in promoting certain learning outcomes. On average, students reported engaging in HICC-related activities in multiple courses and perceived strong gains in critical thinking and problem-solving skills, and understanding of the interactive influence between society and science/technology. Students also perceived moderate gains in their collaboration and leadership skills, and in knowledge and respect for diverse perspectives. Clearly, students believe they are acquiring important knowledge and skills in their first two years at HMC. However, it should not be ignored that a large number of students perceived “no change” in their collaboration and leadership skills and appreciation of diversity. Similarly, an alarming percentage of students felt that their communication skills declined over their first two years at HMC.

It is encouraging that the various learning activities and experiences appear to produce the desired outcomes. In other words, the frequency with which students reported working on assignments that involved synthesizing information predicted critical thinking and problem-

solving skills, the frequency of considering the influence of society on science predicted understanding of the interaction between science and society, etc. Still, it is important to compare student reports with instructor reports on the frequency and effectiveness of various learning activities. As each of the learning activities and outcomes addressed in the Sophomore Survey are explicit goals of the HICC plan, one would hope that instructors are making deliberate efforts to integrate these activities into their Core curriculum. However, nearly 35% of 2005 respondents reported that diverse perspectives were included in one or fewer classes. Similarly, about 30% of 2005 respondents reported that leadership opportunities and consideration of the influence of society on science occurred in one or fewer classes. This suggests that either faculty are neglecting these goals, or that faculty attempts to address these goals are ineffective. It is important to compare faculty and student reports regarding learning activities to determine the effectiveness of instructors' efforts and strategies.

Aside from understanding of the interaction between society and science, the longitudinal analyses did not suggest institutional improvement over the last few years in most areas. However, this is not necessarily cause for discouragement. This is only the second year of implementation of the HICC and institutional change is slow. However, these results indicate that there is plenty of room for improvement, especially in the area of student support. It is clear that students would benefit from greater academic and social support from HMC. Similarly, care must be taken to maintain high levels of student satisfaction with their relationships with other students, faculty, and staff. Such support is crucial to student success.

Appendix A: HMC Sophomore Survey – Spring 2005

In your experience at HMC so far, in how many of your courses have you done each of the following?

	In No Courses					In 5 or more Courses
1. Made an oral presentation	0	1	2	3	4	5
2. Received helpful feedback on writing from an instructor	0	1	2	3	4	5
3. Worked on a paper, project, or assignment that involved synthesizing information or experiences into new, more complex interpretations and relationships	0	1	2	3	4	5
4. Worked on a paper, project, or assignment that involved making judgments about the value of information, arguments, or methods	0	1	2	3	4	5
5. Included diverse perspectives (different races, religions, genders, social frameworks, etc.) in class discussions or assignments.....	0	1	2	3	4	5
6. Worked with other students on projects as part of course requirements	0	1	2	3	4	5
7. Considered how human or societal factors might influence the practice of science or engineering in class discussions or assignments	0	1	2	3	4	5
8. Considered how science or technology might impact society in class discussions or assignments	0	1	2	3	4	5
9. Had the opportunity in class to serve as a leader	0	1	2	3	4	5

Compared with when you first started college, how would you describe your current:

	Much Stronger	Stronger	No Change	Weaker	Much Weaker
10. Public speaking ability	5	4	3	2	1
11. Writing skills	5	4	3	2	1
12. Ability to think critically	5	4	3	2	1
13. Ability to work cooperatively	5	4	3	2	1
14. Leadership abilities	5	4	3	2	1
15. Ability to be an effective team member	5	4	3	2	1
16. Ability to manage a project	5	4	3	2	1
17. Knowledge of people from different races or cultures	5	4	3	2	1
18. Respect for people from different races or cultures	5	4	3	2	1
19. Knowledge of different perspectives, beliefs, values, or life experiences	5	4	3	2	1
20. Respect for different perspectives, beliefs, values, or life experiences	5	4	3	2	1
21. Understanding of how your future professional work might impact society	5	4	3	2	1
22. Understanding of how society might influence science or technology	5	4	3	2	1
23. Analytical and problem-solving skills	5	4	3	2	1
24. Mathematical skills	5	4	3	2	1

To what extent does HMC:

	Very Much			Very Little
25. Provide the support you need to succeed academically	4	3	2	1
26. Help you cope with your non-academic responsibilities	4	3	2	1
27. Provide you with the support you need to thrive socially	4	3	2	1

Rate the quality of your relationships with people at your institution:

28. Other students	7	6	5	4	3	2	1	
	Friendly, Supportive						Unfriendly, Unsupportive	
29. Faculty members	7	6	5	4	3	2	1	
	Friendly, Supportive						Unfriendly, Unsupportive	
30. Administrative personnel and offices	7	6	5	4	3	2	1	
	Helpful, Flexible, Considerate						Unhelpful, Rigid, Inconsiderate	
31. How would you evaluate your entire educational experience at this institution?					Excellent	Good	Fair	Poor
					4	3	2	1

32. When you first arrived at Mudd, were you planning to study abroad?YES NO

If yes,

a) Where were you planning to go? _____

b) What was your primary reason for wanting to study abroad?

c) Are you still planning to study abroad?YES NO

If yes, where are you planning to go? _____

If no, or if you have changed your destination, why have your plans changed?

Table 1
HMC Sophomore Survey Item Means (N = 90)

Questionnaire Item	Mean	SD
In your experience at HMC so far, in how many of your courses have you done each of the following? Scale: 0-5 (0 = In No Courses, 5 = In Five or More Courses)		
Made an oral presentation	2.86	1.40
Received helpful feedback on writing from an instructor	3.07	1.41
Worked on a paper, project, or assignment that involved synthesizing information or experiences into new, more complex interpretations and relationships	3.19	1.51
Worked on a paper, project, or assignment that involved making judgments about the value of information, arguments, or methods	3.21	1.41
Included diverse perspectives (different races, religions, genders, social frameworks, etc.) in class discussions or assignments	2.28	1.29
Worked with other students on projects as part of course requirements	3.78	1.38
Considered how human or societal factors might influence the practice of science or engineering in class discussions or assignments	2.60	1.59
Considered how science or technology might impact society in class discussions or assignments	2.83	1.48
Had the opportunity in class to serve as a leader	2.38	1.51
Compared with when you first started college, how would you describe your current: Scale: 1-5 (1 = Much Weaker, 5 = Much Stronger)		
Public speaking ability	3.27	0.80
Writing skills	3.30	0.96
Ability to think critically	4.26	0.73
Ability to work cooperatively	3.89	0.80
Leadership abilities	3.63	0.74
Ability to be an effective team member	3.87	0.69
Ability to manage a project	4.00	0.76
Knowledge of people from different races or cultures	3.46	0.84
Respect for people from different races or cultures	3.44	0.75
Knowledge of different perspectives, beliefs, values, or life experiences	3.81	0.70
Respect for different perspectives, beliefs, values, or life experiences	3.60	0.70
Understanding of how your future professional work might impact society	4.01	0.70
Understanding of how society might influence science or technology	4.09	0.68
Analytical and problem-solving skills	4.56	0.62
Mathematical skills	4.66	0.60
To what extent does Harvey Mudd College: Scale: 1-4 (1 = Very Little, 4 = Very Much)		
Provide you with the support you need to succeed academically	3.58	0.62
Help you cope with your non-academic responsibilities	2.19	0.89
Provide you with the support you need to thrive socially	2.40	0.93

Rate the quality of your relationships with people at your institution: Scale: 1-7 (1 = Unfriendly & Unsupportive, 7 = Friendly & Supportive)		
The quality of your relationships with other students	6.18	0.82
The quality of your relationships with faculty members	6.37	0.76
The quality of your relationships with administrative personnel and offices	5.66	1.30
Scale: 1-4 (1 = Poor, 4 = Excellent)		
How would you rate your entire educational experience at this institution	3.55	0.58
Scale: 1-4 (1 = Yes, 2 = No)		
When you first arrived at Mudd, were you planning to study abroad?	1.71	0.46
Are you still/now planning to study abroad?	1.71	0.46

Table 2
HMC Sophomore Survey Scale Means and Items (N = 90)

Scale and Items	Mean	SD
Learning Outcomes Scale: 1-5 (1 = Much Weaker, 5 = Much Stronger)		
Critical Thinking & Problem Solving Ability to think critically Analytical and problem-solving skills Mathematical skills	4.49	0.54
Interaction Between Society and Science Understanding of how your future professional work might impact society Understanding of how society might influence science or technology	4.05	0.60
Collaboration & Leadership Skills Ability to work cooperatively Leadership abilities Ability to be an effective team member Ability to manage a project	3.85	0.58
Appreciation of Diverse Perspectives Knowledge of people from different races or cultures Respect for people from different races or cultures Knowledge of different perspectives, beliefs, values, or life experiences Respect for different perspectives, beliefs, values, or life experiences	3.58	0.61
Support Scale: 1-4 (1 = Very Little, 4 = Very Much) Provide you with the support you need to succeed academically Help you cope with your non-academic responsibilities Provide you with the support you need to thrive socially	2.72	0.65
Relationships Scale: 1-7 (1 = Unfriendly & Unsupportive, 7 = Friendly & Supportive) The quality of your relationships with other students The quality of your relationships with faculty members The quality of your relationships with administrative personnel and offices	6.07	0.77

Table 3

Summary of Regression Analysis for Learning Activities Predicting Critical Thinking & Problem Solving (N = 85)

Variable	r	B	SE B	β
Oral Presentation	.20*	.01	.01	.13
Helpful Feedback	.25**	.01	.01	.13
Synthesizing Information	.34**	.03*	.01	.30*
Making Judgments	.25**	.00	.02	.03
Diverse Perspectives	.21*	.01	.02	.08
Worked with Others	.12	-.00	.01	-.01
Influence of Society	.19*	.01	.02	.11
Influence of Science	.13	-.02	.02	-.20
Serve as Leader	.03	-.01	.01	-.12

Note. $R^2 = .17$

* $p \leq .05$; ** $p \leq .01$

Table 4

Summary of Regression Analysis for Learning Activities Predicting Understanding of Interaction between Society and Science (N = 85)

Variable	r	B	SE B	β
Oral Presentation	.19*	.05	.29	.12
Helpful Feedback	.10	.02	.05	.04
Synthesizing Information	.12	-.08	.05	-.19
Making Judgments	.18*	-.04	.06	-.09
Diverse Perspectives	.15	-.01	.06	-.01
Worked with Others	.12	-.02	.05	-.04
Influence of Society	.45**	.20**	.07	.54**
Influence of Science	.36**	.01	.07	.03
Serve as Leader	.16	.03	.04	.07

Note. $R^2 = .24^{**}$

* $p \leq .05$; ** $p \leq .01$

Table 5

Summary of Regression Analysis for Learning Activities Predicting Collaboration & Leadership Skills (N = 85)

Variable	r	B	SE B	β
Oral Presentation	.23**	.02	.05	.05
Helpful Feedback	.12	.04	.05	.09
Synthesizing Information	.20*	-.03	.05	-.08
Making Judgments	.21*	-.05	.06	-.12
Diverse Perspectives	.21*	-.03	.06	-.06
Worked with Others	.40**	.13**	.05	.32**
Influence of Society	.36**	.08	.07	.21
Influence of Science	.32**	.05	.07	.12
Serve as Leader	.30**	.06	.04	.16

Note. $R^2 = .26^{**}$

* $p \leq .05$; ** $p \leq .01$

Table 6

Summary of Regression Analysis for Learning Activities Predicting Appreciation of Diverse Perspectives (N = 85)

Variable	r	B	SE B	β
Oral Presentation	.07	-.03	.05	-.06
Helpful Feedback	.02	-.05	.06	-.12
Synthesizing Information	.18*	.01	.06	.03
Making Judgments	.27**	.08	.07	.08
Diverse Perspectives	.20*	.05	.07	.11
Worked with Others	.19*	.05	.06	.11
Influence of Society	.19*	-.06	.08	-.17
Influence of Science	.24*	.11	.08	.26
Serve as Leader	.07	-.03	.05	-.06

Note. $R^2 = .12$

* $p \leq .05$; ** $p \leq .01$

Table 7

*Summary of Regression Analysis for Learning Activities Predicting Public Speaking Skills
(N = 85)*

Variable	r	B	SE B	β
Oral Presentation	.42**	.21**	.06	.38**
Helpful Feedback	.24**	.08	.06	.14
Synthesizing Information	.37**	.13	.07	.26
Making Judgments	.22*	-.05	.08	-.10
Diverse Perspectives	.16	-.04	.07	-.07
Worked with Others	.16	-.04	.07	-.07
Influence of Society	.30**	.17	.09	.34
Influence of Science	.19*	-.15	.08	-.30
Serve as Leader	.21*	.05	.05	.10

Note. $R^2 = .31^{**}$

* $p \leq .05$; ** $p \leq .01$

Table 8

Summary of Regression Analysis for Learning Activities Predicting Writing Skills (N = 84)

Variable	r	B	SE B	β
Oral Presentation	.30**	.21**	.08	.30**
Helpful Feedback	.40**	.24**	.08	.37**
Synthesizing Information	.24*	.10	.09	.16
Making Judgments	.09	-.12	.10	-.18
Diverse Perspectives	.18	.03	.09	.04
Worked with Others	.03	-.05	.08	-.07
Influence of Society	.08	-.03	.11	-.05
Influence of Science	.11	-.01	.11	-.02
Serve as Leader	.08	-.01	.07	-.01

Note. $R^2 = .26^{**}$

* $p \leq .05$; ** $p \leq .01$

Table 9

Summary of Regression Analysis for Learning Activities Predicting Evaluation of Educational Experience (N =84)

Variable	r	B	SE B	β
Oral Presentation	.10	.02	.05	.04
Helpful Feedback	.26**	.05	.05	.13
Synthesizing Information	.32**	.12*	.06	.32*
Making Judgments	.18*	-.03	.07	-.07
Diverse Perspectives	.22*	.05	.06	.11
Worked with Others	.07	-.03	.06	-.06
Influence of Society	.14	.01	.07	.03
Influence of Science	.10	-.06	.08	-.16
Serve as Leader	.20*	.04	.05	.11

Note. $R^2 = .05$

* $p \leq .05$; ** $p \leq .01$

Table 10

Summary of Regression Analysis for Learning Outcomes Predicting Evaluation of Educational Experience (N = 88)

Variable	r	B	SE B	β
Critical Thinking	.33**	.86*	.43	.22*
Society & Science	.09	-.02	.10	-.03
Collaboration & Leadership	.16	-.01	.11	-.01
Diverse Perspectives	.19*	.12	.10	.13
Public Speaking	.34**	.08	.09	.12
Writing Skills	.37**	.16*	.07	.27*

Note. $R^2 = .23^{**}$

* $p \leq .05$; ** $p \leq .01$

Table 11

Summary of Regression Analysis for Support and Relationships Predicting Evaluation of Educational Experience (N = 89)

Variable	r	B	SE B	β
Support	.45**	.31**	.09	.34**
Relationships	.42**	.22**	.08	.29**

Note. $R^2 = .27^{**}$

* $p \leq .05$; ** $p \leq .01$

Table 12

Analyses of Variance for Differences in Learning Activities and Outcomes due to Year

Variable	SS	df	MS	F	p
<i>Oral Presentation</i>					
Year	19.13	2	9.57	4.68**	.01
<i>Helpful Feedback</i>					
Year	7.80	2	3.90	1.80	.17
<i>Synthesizing Information</i>					
Year	6.66	2	3.33	1.45	.24
<i>Making Judgments</i>					
Year	8.11	2	4.05	1.90	.15
<i>Diverse Perspectives</i>					
Year	5.02	2	2.51	1.44	.24
<i>Worked with Others</i>					
Year	.24	2	.12	.56	.57
<i>Influence of Society</i>					
Year	19.82	2	9.91	4.65**	.01
<i>Influence of Science</i>					
Year	21.82	2	10.91	5.08**	< .01
<i>Serve as Leader</i>					
Year	9.46	2	4.73	1.95	.15
<i>Critical Thinking</i>					
Year	.12	2	.06	2.77	.07
<i>Society & Science</i>					
Year	4.65	2	2.32	6.37**	< .01
<i>Collaboration & Leadership</i>					
Year	.58	2	.29	.75	.48
<i>Diverse Perspectives</i>					
Year	.12	2	.06	.17	.84
<i>Public Speaking</i>					
Year	1.66	2	.83	.92	.40
<i>Writing Skills</i>					
Year	.80	2	.40	.73	.48

* $p \leq .05$; ** $p \leq .01$

Table 13

T-Tests for Differences in Support, Relationships, Intentions to Study Abroad and Quality of Education due to Year

<u>Variable</u>	<u>M</u>	<u>t</u>	<u>df</u>	<u>p</u>
Support	.14	1.42	189	.16
Relationships	-.05	-2.07	189	.04
Study Abroad, Starting	.08	1.19	187.65	.24
Study Abroad, Now	.08	1.06	118.18	.29
Quality of Education	.15	1.32	106.27	.19
