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# The Effect of Honors Courses on Grade Point Averages

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## BACKGROUND AND JUSTIFICATION

High-ability entering college students give three main reasons for not choosing to become part of honors programs and colleges; they and/or their parents believe that honors classes at the university level require more work than non-honors courses, are more stressful, and will adversely affect their self-image and grade point average (GPA) (Hill; Lacey; Rinn). Some of them are likely basing their belief on the experience they had with Advanced Placement (AP) classes in their high schools. Although AP classes are not specifically designed to be more work or more difficult, at their worst they can be little more than that (Immerwahr and Farkas; Challenge Success, 2013). Just as important as the fear of more work and increased difficulty is anxiety about the increased competition within a high-ability cohort. Anne N. Rinn, for instance, cites the “theory of relative deprivation” and the “Big-Fish-Little-Pond Effect” as factors that inhibit students from joining an honors program.

Such perceptions of honors coursework are common even among some university advisors and faculty, who often perceive honors courses as entailing more work, being more competitive, and having the potential to lower students' GPAs. As a result, high-ability students who might benefit from an honors education decline participation because they believe honors classes will jeopardize their academic standing (Hill).

Previous published studies have not focused specifically on how honors classes affect GPAs although several have looked at the general impact of participation in an honors program/college (e.g., Austin; Astin; Schuman; Seifert et al.). Only a handful of studies make a specific correlation between participation in honors programs and the effect on GPAs: Pflaum, Pascarella, and Duby; Cosgrove; Rinn; and Shushok in both 2002 and 2006.

The first of these studies, conducted by Pflaum et al. in 1985, looks at the effects of entering students' first-year participation in the honors college at the University of Illinois at Chicago. Specifically, this study considers the effect of honors participation on academic achievement as defined by cumulative GPA after the first academic year and by persistence in the university. It finds that participation in the honors college had a highly significant positive affect ( $p < .001$ ) on academic achievement as defined by GPA but no meaningful effect with regard to persistence. The authors attributed the increase in academic achievement to the interaction that honors students had with their honors peers and faculty members (418).

Although the study by Pflaum et al. finds that participation in an honors college significantly increases the cumulative GPAs of first-year honors students, it does not then conclude that taking honors courses is a factor in raising GPAs. Rather, in response to the possibility that different grading standards in honors versus non-honors courses caused the differences in achievement, the authors conclude that "not only are the honors courses more demanding than the typical freshman courses, but it is also likely that the grading in honors courses is at least equal in severity to nonhonors [*sic*] courses" (419). The authors imply that the greater rigor of honors classes had no effect or even lowered cumulative GPAs.

In the second study, Cosgrove in 2004 looked at the academic performance, retention, and degree completion of a relatively small group of honors students ( $n = 112$ ) at three separate institutions over a five-year period. Some of these students remained in their honors program until graduation, and some did not. The study also includes a control group of non-honors high-ability students ( $n = 108$ ). The study's primary purpose is to compare the

academic performance and graduation rates of students who graduated as part of an honors program to those who started in honors programs but did not finish the program requirements. It finds that the honors students who completed their honors requirements had statistically significant higher GPAs ( $p < .001$ ) than both the students who had started in honors programs but did not finish and the high-ability students not part of honors programs. The author does not comment on what specifically may have led to the higher GPAs for the honors completers.

The third study, published by Shushok in 2006, measured how participation in an honors college affects students. For this four-year study, Shushok initially selected 86 honors college students at a Carnegie-classification “Doctoral/Research Extensive” university in a Mid-Atlantic state. He then matched each honors student with an equally qualified non-honors student from a control group who was a “perfect match . . . in the categories of race, gender, and residency” (87). Among other findings, Shushok found that honors students’ GPAs after their first year of college were significantly higher: 3.41 for honors students and 3.18 for non-honors students. Three years later, Shushok found that the honors students remaining from the original cohort ( $n = 79$ ) had mean GPAs that were not significantly different from their counterparts in the control group: 3.46 for honors students and 3.40 for non-honors students. His study thus indicated that participation in an honors program increases the cumulative GPA after the first year of study but that the first-year increase levels out after the fourth year of study. He makes no comment about the specific effect of honors courses on GPAs.

The fourth study, conducted by Rinn in 2007, examines the academic achievement (including GPA), academic self-concepts, and aspirations of a group of gifted college students who were part of an honors program ( $n = 248$ ) as compared to a control group of gifted college students not part of an honors program ( $n = 46$ ). The study took place at a large university in the Midwest. Results indicated that high-ability students who are part of an honors program have higher academic achievement, i.e., higher GPAs, and higher self-concepts than do high-ability students not participating in an honors program. The two cohorts tested exhibited no difference in aspirations. The author did not comment on what role honors coursework played in the increased GPAs of the honors students.

All four of these studies conclude that participation in an honors program will raise a student’s cumulative GPA in the first year. Shushok’s is the only study that tracks beyond the first year, and it indicates that participation in an

honors program will produce no meaningful difference in the cumulative GPA after four years. None of the studies specifically addresses the influence of honors coursework on the GPA although one study (Pflaum et al.) implies that honors coursework in itself either does not affect or could lower the GPA.

## THE CURRENT STUDY

The current study is unique in its focus on how honors coursework affects the cumulative GPA. The study was initially a response to the somewhat common perception that honors courses adversely affect GPAs because they are more work-intensive, competitive, and difficult than non-honors courses. The study does not attempt to draw conclusions about whether honors courses are actually more or less work-intensive, competitive, challenging, or difficult than non-honors courses; its objective is only to test the validity of the perception that honors coursework lowers GPAs.

### Study I

The first study began with a cohort of 786 students that was unusual in its makeup and, for that reason, especially apt for the purpose. All 786 students were part of an honors program at a large, public, R1 university. They all had earned their way into the program via a minimum composite ACT/SAT score of 29/1300 and a high school GPA of at least 3.8. Once in the program, they had to maintain a university GPA of 3.33 to maintain membership. The unique aspect of this cohort was that students who achieved the entry requirements for honors were automatically enrolled in the honors program. There were no honors curricular requirements, and the result was that some students took many honors courses, some took several, and others took none at all. Students remained part of the honors program unless they let their GPA fall below the minimum GPA (3.33).

#### *Study 1 Method*

Of the original cohort of 786 honors students, the study considered only the 473 students who had remained in the program for at least two years. Data collection spanned two academic years of their grades, specifically the fall semester of 2006 through the spring semester of 2008.

### Study 1 Results

The study compared two groups: a control group of honors students who took no honors courses at all and a test group of students who took at least two honors courses, which generally meant at least six semester hours of honors coursework.

By an independent sample t-test, the mean GPAs of the two groups—3.70 for the control and 3.74 for the test group—are statistically the same (p-value > .01).

	Control			Two Honors Courses			P-value
	N	Mean	Std Dev	N	Mean	Std Dev	
Two-year GPA	226	3.70	0.21	161	3.74	0.24	Not Significant

To verify that the data were not biased by establishing a minimum of two honors courses—a number chosen in order to include only students who showed a commitment to honors coursework—the same comparison with the same control group was done with students who took a minimum of one, two, three, and four honors courses.

	Control			# honors courses	Test			P-value
	N	Mean	Std Dev		N	Mean	Std Dev	
Two-year GPA	226	3.7	0.21	1 or more	247	3.73	0.24	Not Significant
Two-year GPA	226	3.7	0.21	2 or more	161	3.74	0.24	NS
Two-year GPA	226	3.7	0.21	3 or more	111	3.74	0.23	NS
Two-year GPA	226	3.7	0.21	4 or more	65	3.72	0.23	NS

As the table shows, initial results based on a two-course minimum were duplicated regardless of the number of honors courses considered. The means and standard deviations were remarkably consistent between populations regardless of the number of honors courses students took.

### Study 1 Conclusions

The findings from this first study were that the mean GPA of honors students who took honors classes (3.74) was statistically the same as that of honors students who took no honors courses (3.70).

## Study II

The second study, which was done at the same university about five years later (fall 2015), used a different methodology since the honors program had instituted a mandatory curriculum. The subjects of the second study were once again all honors students, this time totaling 450. All of them were 2013 first-year entrants in the honors program, and all at the time of the study had completed the curricular requirement of twelve semester hours of honors coursework within their first two years in the program.

Note that this second study differed from the first in that it compared honors students' GPAs in their honors classes to their GPAs for all their classes. The first study, in contrast, compared GPAs of one group of honors-eligible students who took honors courses to those of another group of honors-eligible students who had not taken honors courses.

Results from this second study were not as straightforward as from the first study although they ultimately were similar. As shown below, an adjustment was made for two popular and challenging honors courses in order to get results that were not skewed.

### *Study II Method and Results*

The second study ran three different scenarios.

#### SCENARIO 1

In the first scenario, the GPAs of all 450 honors students were calculated for both their university honors courses and all their university courses.

#### SCENARIO 1 RESULTS

	Overall GPA			Honors GPA			P-value
	N	Mean	Std Dev	N	Mean	Std Dev	
Two-year GPA	450	3.65	0.28	450	3.63	0.39	<.01

Given the results from the first study, the lower GPAs of honors students in their honors courses were a surprise. Although the difference was only .02, it was statistically significant (as per a correlated t-test) and in the authors' opinions warranted additional investigation.

## SCENARIO 1 CONCLUSIONS

The suspicion was that two particular courses, taken by about a third of the honors students, might be skewing the results. These two courses, Principles of Chemistry I and II, are lower-level and required for many majors, i.e., they are high-enrollment and foundational. They are also high-risk because the recommended grade distribution for them is stricter than for most other courses in their home college, resulting in relatively higher rates of C's, D's, and F's, withdrawals, and incompletes across all sections (both honors and non-honors) of the courses. In other words, these two courses fit the description of “gateway courses,” sometimes referred to as “weed-out courses” (see at <http://www.jngi.org/gateway-courses-definition>).

The honors sections of Principles of Chemistry differ from the non-honors sections in having a single instructor instead of a group of three instructors who rotate through the classes. The lecture session is smaller, although still over a hundred students, with student interaction encouraged, unlike in the much larger non-honors sections. Students in the honors section also hear about current research in chemistry from faculty guest lecturers. At the time of the study, students in the honors and non-honors sections took the same exams, with all grades aggregated in the assigning of letter grades.

## SCENARIO 2

A second scenario controlled for the two chemistry courses by considering the GPAs of honors students for all their honors classes except Principles of Chemistry I and II. The mean average of these grades was then compared to the mean of the GPAs of those same honors students for all their university classes.

## SCENARIO 2 RESULTS

	Overall GPA			Honors GPA (w/o Chem)			P-value
	N	Mean	Std Dev	N	Mean	Std Dev	
Two year GPA	439	3.70	0.31	439	3.68	0.23	NS

These two means—3.70 and 3.68—were determined to be statistically the same.

## SCENARIO 2 CONCLUSIONS

When the data were controlled for the two gateway classes, there was no difference in GPAs for honors versus non-honors courses.

## SCENARIO 3

In order to confirm the assumption that the two gateway courses were indeed skewing the results, the study examined a year's worth of data specifically on the two gateway courses.

## SCENARIO 3 RESULTS

First, the average grade for all university students who had taken Principles of Chemistry I in the fall 2014 semester was calculated and compared to the average grade for students who had taken the honors section. The process was repeated for Principles of Chemistry II in the spring 2015.

	Non-Honors Chemistry			Honors Chemistry			P-value
	N	Mean	Std Dev	N	Mean	Std Dev	
Principles of Chem I Fall 2014 grades	990	2.51	0.91	269	3.13	0.71	<.01
Principles of Chem II Spring 2015 grades	590	2.56	0.88	132	3.26	0.71	<.01

An independent t-test indicated a statistically significant difference in the average grades between the honors and non-honors sections of the same class.

## SCENARIO 3 SUPPLEMENT

In order to address the possibility that the honors students might have gotten higher grades in honors chemistry sections simply because they are high-ability students, the study established a control group of students with academic ability comparable to the honors cohort based on high school GPA and ACT. Students in this control group were honors-eligible but did not take the honors sections of chemistry either because they were not members of the honors program and were restricted from enrolling or, if members of the program, were unwilling or unable because of scheduling conflicts to take the honors chemistry section. Their grades in the non-honors chemistry sections

were calculated and compared to the grades earned by honors students in the honors chemistry sections for both fall 2014 and spring 2015.

	Honors Eligible in Non-Honors Chemistry			Honors Chemistry			P-value
	N	Mean	Std Dev	N	Mean	Std Dev	
Fall 2014 grades	134	2.78	0.84	269	3.13	0.71	<.01
Spring 2015 grades	143	2.70	0.95	132	3.26	0.71	<.01

The average grades for this control cohort of high-ability students were, to a statistically meaningful degree (via an independent t-test), lower than the grades that similar high-ability students earned in the honors section of these courses.

This comparison indicates that the honors sections of Principles of Chemistry I and II did not lower mean GPAs more than non-honors sections of those courses did; in fact, they had significantly less negative effect. In other words, taking an honors section of a Principles of Chemistry course lowered GPAs less than non-honors sections did.

### SCENARIO 3 CONCLUSIONS

The data from the third scenario revealed that the Principles of Chemistry classes were indeed gateway courses in the sense that the average grade for the honors sections (3.20) was significantly lower than the average grade (as indicated by the mean GPA) of honors students in all their honors classes (3.63).

The data from the third scenario also indicated that the honors sections of the Principles of Chemistry courses produced higher grades than the non-honors sections: the grade averages were around 2.5 in all sections of Principles of Chemistry I and II compared to around 3.1–3.2 in the honors sections of both courses. In addition, a control group of equally high-ability students confirmed that the higher average grades for the honors sections of the two Principles of Chemistry courses did not correlate to levels of student ability.

These results justify controlling for the two Principles of Chemistry courses when calculating mean GPAs.

## *Study II Conclusion*

The second study showed that honors students' GPAs in their honors courses are statistically the same as their GPAs in all their classes. Thus, the conclusion for the second study is the same as for the first study: honors courses do not adversely affect the GPAs of honors students.

## **RESULTS**

The first study showed that honors students who took honors classes attained a GPA statistically the same as that of honors students who did not take honors classes. The second study further indicated that the GPA of honors students who took honors classes was statistically the same as the GPA for all their university courses. Although the collection of data took place at a single Carnegie-classified large, public, R1 university, the findings show that the perception of honors courses as adversely affecting GPAs is invalid.

## **DISCUSSION**

This study makes no claims about the difficulty of honors courses, the amount or level of work they involve, or how challenging and competitive they are. Its findings that honors courses do not adversely affect GPAs may nevertheless lead someone to conclude that honors courses are no more challenging or difficult than non-honors courses, a conclusion that is likely not the case and certainly not determinable by looking only at GPAs. Because the format (e.g., class size) and pedagogy (e.g., learner-centered rather than lecture) of honors courses typically differ from non-honors courses, comparing mean GPAs of the two will not produce meaningful results about levels of difficulty or challenge. Indeed, in the ideal honors class, students typically find more challenge and will often cover more material or go more deeply into the subject matter.

The findings of this study, however, do provide a corrective to the perception that becoming part of an honors program or college adversely affects academic performance as measured by GPA. This information should be useful to those who recruit for honors programs, those who advise high-ability students at both the secondary and undergraduate levels, and especially those high-ability students who fear that they might be overwhelmed by honors coursework.

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