Experiment on +/- Grade Modifiers

EXTENDED EXECUTIVE SUMMARY

After discussions beginning in the 1992-1993 academic year along with discussions with various parts of the MIT community and a survey of students and faculty on grading policy and grading systems, the Committee on Academic Performance (CAP) proposed a change in the Institute grading system allowing the use of the modifiers of + and - to the grades of A, B, and C. In consultation with the Committee on the Undergraduate Program (CUP), the Committee on Graduate School Policy (CGSP), and the Faculty Policy Committee (FPC), a three-year experiment on the use of intermediate grades (i.e. the use of + and - modifiers on the grades of A, B, and C) was approved and subsequently endorsed by the faculty in April 1995. This three-year time period was later extended to a fourth year to allow complete consideration of the data and opinions of the community.

The ad hoc CUP Subcommittee on Intermediate Grades was assembled to oversee all facets of this experiment, evaluate the effects of the grading policy on the MIT community, and provide a final report and recommendation on the issue of intermediate grades. This is the extended executive summary of the final report of the subcommittee. This is provided as background to the introduction of the pertinent motion to amend the Faculty Rules and Regulations in line with:

the unanimous recommendation of the subcommittee to make the current experimental internal use of + and - modifiers permanent

as endorsed by CUP and FPC. The full report will be available prior to the Faculty Meeting where the vote on the motion will be taken.

The evaluation of the effects of the experimental grading policy on the MIT community involved several facets. One, data on the grades issued on a term-by-term basis including terms prior to the introduction of +/- modifiers was obtained through the Registrar's office and examined based on a number of factors. Two, the use of the grades in end-of-term actions regarding academic performance of students was assessed via surveys of undergraduate and graduate registration officers and discussions with the CAP and CGSP. Three, the general attitudes of students and faculty towards the use of intermediate grades were assessed via discussions with a number of student groups and by an extensive survey of all students and faculty in the fall of 1997 (participation rate of 26% of the undergraduate students, 14% of the graduate students, and 31% of the faculty). In addition, data on the practice of other colleges and universities was acquired.

Over the three-year period, the subcommittee identified five key questions pertinent to evaluating the experiment. These were based on the original work of the CAP, the charge to the subcommittee by the CUP, discussions with various parts of the community, and internal subcommittee discussions. These five questions are:

1. What are the overall statistics on grade distributions, the effects on term and overall GPA's (individual and average), and usage of the +/- modifiers?
2. How do faculty and students utilize grades as feedback and information mechanisms?
3. How do students utilize internal grades (specifically, are external uses made)?
4. What is the effect on perceived student pressure and how do students react?

5. Do faculty feel they have sufficient information to grade with the level of fidelity represented by + and - modifiers?

Assessment of these questions was accomplished within the context of considering three overall grading systems: one, the usual letter grades without modifiers; two, the usual letter grades with + and - modifiers reported only internally; and three, the usual letter grades with + and - modifiers reported both internally and externally and thereby leading to answering the overall question of: "Which grading system do parts of the community prefer?".

The survey was assembled to help answer these questions and the data on grades was examined with these in mind. Based on these results, the following answers emerged.

1. What are the overall statistics on grade distributions, the effects on term and overall GPA’s (individual and average), and usage of the +/- modifiers?

The faculty make substantial use of the + and - modifiers and the utilization of these modifiers has negligible effects on grade distributions and on term and cumulative averages on both overall and individual bases. In particular, the addition of the + and - modifiers did not result in any discernible change in the overall grade distributions, within the categories of A, B, C, D, and F, as compared to distributions before the introduction of the modifiers. After the introduction of the modifiers, the distribution of grades including categories with the modifiers was consistent from term to term. Student GPA’s on a term and cumulative basis were relatively unaffected with an overall average decrease in 0.05 of a point across all students during the three-year period. This is shown for the case of undergraduate students in Table 1. Finally, faculty made use of the modifiers in 75% to 80% of the undergraduate subjects and 55% to 60% of the graduate subjects.

### Table 1  Effect of + and - modifiers on undergraduate student overall GPA’s (+ and - modifiers equated to 0.33 points)

<table>
<thead>
<tr>
<th>GPA Group</th>
<th>% down (0.1 point)</th>
<th>% no change</th>
<th>% up (0.1 point)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;3.5</td>
<td>34</td>
<td>62</td>
<td>4</td>
</tr>
<tr>
<td>3.5-4.0</td>
<td>44</td>
<td>53</td>
<td>3</td>
</tr>
<tr>
<td>4.0-4.5</td>
<td>29</td>
<td>63</td>
<td>8</td>
</tr>
<tr>
<td>4.5-5.0</td>
<td>33</td>
<td>66</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>33</td>
<td>63</td>
<td>4</td>
</tr>
</tbody>
</table>

2. How do faculty and students utilize grades as feedback and information mechanisms?

Over 70% of the students and 85% of the faculty find that the + and - modifiers provide better feedback to the students. In regard to advising, 76% of the faculty feel that
the addition of the modifiers helps advisors in evaluating student progress, while students agree with this assessment though not as strongly. Finally, although only 19% of the faculty report that departmental end-of-term academic actions are affected by the use of the modifiers, the members of the CAP report keeping in mind the + and - modifiers when making decisions in the end-of-term meetings.

3. How do students utilize internal grades (specifically, are external uses made)?

Based on the results of the survey, 90 to 95% of both undergraduate and graduate students report not making external uses of the + and - modifiers. This includes potential uses such as on graduate school and scholarship applications, as well as in applications for jobs, coops, and internships. Similarly, students have been asked by external sources for such information at a rate of only 5%.

4. What is the effect on perceived student pressure and how do students react?

The answer to this question was sought in terms of the effects of using + and - modifiers in internal and external modes as compared to having no such modifiers. Three key effects examined were the potentials for an increase in academic pressure and stress, a greater emphasis on grades than on learning, and an increase in competition and a lessening of cooperation amongst peers. The student and faculty perceptions in these regards were dramatically different for both internal and external uses of the + and - modifiers as can be seen in Figures 1 and 2. In the case of the internal use, the overall student perception is moderately negative in all three categories while faculty generally perceived no effects. Both the student and faculty indicated an increase in those who perceived negative effects if the + and - modifiers were used in an external fashion with over 90% of the undergraduate students anticipating an increase in academic pressure while only 34% of the faculty anticipate such an increase.
Figure 1  Perception of effects of internal use of +/- modifiers on students
(U=Undergraduate Students, G=Graduate Students, F=Faculty)

Figure 2  Perception of effects of external use of +/- modifiers on students
(U=Undergraduate Students, G=Graduate Students, F=Faculty)
5. Do faculty feel they have sufficient information to grade with the level of fidelity represented by + and - modifiers?

Over 90% of the faculty feel that they have sufficient information to grade with the level of fidelity provided with the use of + and - modifiers. Students generally agree with this with 64% of the undergraduate students and 71% of the graduate students feeling that their instructors can make a more accurate assessment of their performance with the modifiers while only 17% of each student group disagreeing with this.

This leads to answering the overall question of "Which grading system do parts of the community prefer?". The results of the survey shown in Figure 3 clearly indicate that both sets of students and the faculty prefer the use of + and - modifiers as opposed to returning to the previous system of straight letter grades. However, there is clear difference in opinion as to whether these grades with modifiers should be reported only internally or externally as well with undergraduate students clearly favoring internal use, graduate students somewhat favoring internal use, and faculty somewhat favoring external use. Of additional significance is the very clear unfavorable opinion that nearly 80% of the undergraduate students have for the external use of such modifiers.

![Figure 3](image-url)

**Figure 3** Community opinion on desirability of grading systems

(U=Undergraduate Students, G=Graduate Students, F=Faculty)
The input from the community, assessment of the statistics on the grades with and without + and - modifiers, and the consideration of the key questions and the answers which emerged, leads the subcommittee to the following four-point reasoning:

1. The use of + and - modifiers minimally affects grade distributions and GPA’s.
2. There are clear advantages, most importantly feedback of student performance to students and faculty, to the continued use of the modifiers.
3. These advantages are attainable whether the modifiers are used internally or externally.
4. The perceived negative effects on students indicate that the extension of the use of the modifiers to external reporting is not warranted.

The subcommittee therefore *unanimously recommends* making the current experimental internal use of + and - modifiers permanent.

Respectfully submitted,

the *ad hoc* CUP Subcommittee on Intermediate Grades

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