

Ad Hoc Committee on Plus/Minus Grading, 2002-2003

Final Report
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Ad Hoc Committee on Plus/Minus Grading:
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“Teachers in making their final reports should not use the plus and minus signs in their grades. The official grading scheme of the institution does not provide for plus and minus grades.”
EKU President Donovan, July 11, 1932

Introduction

In February 1999, the Ad Hoc Committee on Grade Inflation submitted a report to the Faculty Senate in which they argued that grade inflation was a problem on the Eastern Kentucky University campus. In an effort to curb grade inflation, the Committee made three recommendations and proposed five motions. One recommendation was to establish a plus/minus grading system. During the 2001-02 academic year, plus/minus grading was instituted. However, there was resistance from both faculty and students from around the campus. Issues that were raised included the lack of an A+, ambiguity about a C-, as well as the impact on GPAs, scholarships, retention, and recruitment. In April 2002, after a year of plus/minus grading, the Faculty Senate placed a temporary moratorium on plus/minus grading.

After the April 2002 Faculty Senate meeting, the Faculty Senate Chair established the Ad Hoc Committee on Plus/Minus Grading. The Committee's charge was to study the impact of plus/minus grading using data from ECU benchmark institutions, other Kentucky public universities, and ECU's experience with plus/minus grading and give a final report and recommendations about continued use of plus/minus grading to the Faculty Senate.

The Committee consisted of one faculty member from each college (Thom Fisher, Health Sciences; Meredith Wells, Arts and Sciences; James Wells, Justice and Safety; Daniel Thorne, Business and Technology; and Martin Diebold, Education), one undergraduate student (Lance Melching) and one graduate student representative from Student Government (Matt Schumacher).

Methods

The Ad Hoc Committee on Plus/Minus Grading met monthly and sometimes weekly from September 2002 to April 2003. From the charge, the Committee determined that six research questions needed to be answered. These were accepted by the Faculty Senate on November 4, 2002:

1. Do ECU benchmarks and other Kentucky public universities use plus/minus grading? If yes, how? If no, why not?
2. What are the benefits of plus/minus grading?

3. What are the drawbacks of plus/minus grading?
4. Does plus/minus grading significantly minimize grade inflation?
5. What is the ECU experience of plus/minus grading (e.g., usage rates, like vs. dislike)?
6. Do ECU faculty and students prefer to use plus/minus grading or not?

The Committee developed a plan to answer each of these questions using data from ECU faculty and ECU students; grade data from the ECU Registrar's Office; data from ECU benchmark institutions and other Kentucky public universities; peer-reviewed, published literature on the effects of plus/minus grading; the Executive Summary from the Ad Hoc Committee on Grade Inflation 1999; as well as reports from other universities who have had experience with plus/minus grading.

Procedure

The Committee began its work by examining the scientific literature and the ECU Executive Summary from the Ad Hoc Committee on Grade Inflation 1999 on the usage, benefits, drawbacks, and effectiveness of plus/minus grading. (See results section for review of these articles.) The Committee then designed structured phone interviews for the ECU benchmarks and other Kentucky public universities and written surveys of ECU full-time faculty and students. These surveys, the Phone Interview of ECU's Benchmark Institutions and Kentucky Public Universities, the ECU Faculty Survey on the Plus/Minus Grading System, and the ECU Student Survey on the Plus/Minus Grading System, are located in the Appendix.

Upon completion and review of these documents in February 2003, Committee members used their Phone Interview of ECU's Benchmark Institutions and Kentucky Public Universities to conduct structured phone interviews with Provosts or Registrars from all 18 ECU benchmark institutions and the seven other Kentucky public universities. The Committee was able to complete these interviews with 16 of the 18 benchmark institutions and all seven other Kentucky public universities. Thus, the response rate for this sample was 92%.

Simultaneously, the ECU Faculty Survey on the Plus/Minus Grading System was distributed by campus mail to all university faculty, and the ECU Student Survey on the Plus/Minus Grading System was distributed by campus mail to a random sample of 1500 students. Surveys were sent to all 611 university faculty, and 331 (55%) were completed and returned. This response rate allows us to be 95% confident that our data is accurate within plus or minus 3.61 percentage points. Of the 1500 student surveys distributed, 326 (22%) were completed and returned. This response rate allows us to be 95% confident that our data is accurate within 5.3 percentage points.

All the surveys (the phone interview, the faculty survey, and the student survey) were scanned, and the results were tabulated. Additional comments from respondents were typed and evaluated. Due to the ordinal nature of most of the data, analyses performed were primarily descriptive statistics such as frequencies and modes. However, some comparisons of means also were performed. In all three surveys, participants were asked whether plus/minus grading had a

positive effect, no effect, or a negative effect on a variety of academic issues such as student recruitment, student retention, student motivation, scholarships, grade inflation, etc. The mode (most common response) for each issue is reported. In order to examine the Committee's research questions pertaining to the benefits and drawbacks of plus/minus grading, modes falling in the "positive effect" response category are interpreted as benefits of plus/minus grading, and modes falling in the "negative effect" response category are interpreted as drawbacks of plus/minus grading.¹

Sample

The faculty sample was 72% tenured and 28% non-tenured faculty; 30% Professors, 35% Associate Professors, 29% Assistant Professors, 3% Instructors, 3% Visiting Instructors, and 0.3% Lecturers. The sample was 51% male and 49% female. The average number of years in academe was 17.5. College affiliations were as follows:

- 44% Arts and Sciences
- 15% Business and Technology
- 12% Education
- 24% Health Sciences

¹ As a result of one concerned faculty member questioning the validity of the grade inflation item (#7), the Committee decided to conduct some follow-up validation analyses. When constructing the item, the Committee intended that if the respondent selected "positive effect," that implied that the respondent thought that the plus/minus grading system would have a beneficial or desirable effect and reduce grade inflation. Conversely, if the respondent selected "negative effect," the Committee felt that this implied that the plus/minus grading system would have a negative or undesirable effect and increase grade inflation. In retrospect, the item most likely could have been better worded to avoid any chance of confusion. Nonetheless, the Committee chose to examine this issue further.

To adequately address this issue in a scientific manner, two members of the Committee, working independently, examined the results of open-ended items #16 (benefits of plus/minus grading) and #17 (drawbacks of plus/minus grading) and compared these responses to the "positive effect" and "negative effect" responses in item #7 regarding grade inflation. The two researchers used a very conservative approach in locating open-ended responses that agreed with the Committee's intended response (positive effect implies grade inflation will be reduced, negative effect implies grade inflation will be increased or worsened), and a very liberal approach in locating open-ended responses that disagreed with the Committee's intended response (positive implies grade inflation will be increased, negative implies grade inflation will be decreased). With perhaps one or two exceptions, virtually all of the open-ended responses were consistent with the Committee's intended interpretation of the question. Although it is impossible for the Committee to ascertain whether every faculty member answered the item in the manner intended (because not every faculty member provided responses to these two open-ended items), the Committee felt that the results of this cross-validation check suggest that it was interpreted in the intended manner and thus the item is valid.

6% Justice and Safety

The student sample was 67% female and 33% male; 11% freshmen, 12% sophomores, 17% juniors, 38% seniors, and 22% graduate students. In addition, 48% were full-time students; 14% were Honors students; 15% were on a scholarship; and 74% were ECU students in 2001-2002 when plus/minus grading was used.

Results

1. Do ECU benchmarks and other Kentucky public universities use plus/minus grading? If yes, how so? If no, why not?

Phone interviews with ECU benchmarks and other Kentucky public universities indicated that 8 of our 16 Benchmarks (50%) and one of the 7 other Kentucky public universities (14%) use plus/minus grading. Of those that do use plus/minus grading, 73% use a scale similar to the one that ECU used in 2001-2002 with no credit for A+.

Of those universities that did not use plus/minus grading, one reported having used it in the past. The reasons given for not using plus/minus grading included faculty/student resistance, administrative and software changes necessary to make the switch to plus/minus grading, difficulty distinguishing grades, complexity, financial cost, and anticipated increase in grade change requests from students.

2. What are the benefits of plus/minus grading?

Participants from the benchmark and other Kentucky public universities, ECU faculty, and ECU students were asked whether they thought plus/minus grading had a positive effect, no effect, or a negative effect on a number of academic issues (e.g., recruitment, retention, scholarships, grading accuracy, student motivation, etc.). As noted above, modes falling in the "positive effect" response category were interpreted as benefits, and modes falling in the "negative effect" response category were interpreted as drawbacks.

Participants from the benchmark and Kentucky public universities reported that they thought plus/minus grading had a positive effect on student motivation and grading accuracy. Participants were split on grade inflation: five said that plus/minus grading helped guard against grade inflation, but an equal number said that plus/minus grading had no effect on grade inflation. Furthermore, the nine benchmark and Kentucky public universities using plus/minus grading were asked what benefits their university perceived their plus/minus grading system to have. Reported benefits included more accurately reflects students' work, more precision in grading, and increased student initiative.

EKU faculty reported that the positive effect of plus/minus grading was grading accuracy. EKU students reported no positive effects of plus/minus grading.

3. What are the drawbacks to plus/minus grading?

Participants from all the benchmark and Kentucky public universities reported that they thought plus/minus grading had a negative effect on scholarships. They reported that plus/minus grading had no effect on student recruitment, retention, admittance into graduate programs, student employment opportunities, faculty morale, faculty attitudes toward grading, and grade inflation (as explained above). Furthermore, the nine benchmark and Kentucky public universities using plus/minus grading were asked what drawbacks their universities perceived plus/minus grading to have. Drawbacks reported included more grade appeals, faculty questioning the distinctions between grades, and an *increase* in grade inflation.

EKU faculty perceived plus/minus grading to have a negative effect on scholarships, student motivation, student retention, faculty morale, and faculty attitudes toward grading. Faculty perceived plus/minus grading to have no effect on grade inflation, student recruitment, student retention, student admittance into graduate programs, and student employment opportunities.

EKU students perceived plus/minus grading to have a negative effect on grading accuracy, scholarships, student motivation, student recruitment, student retention, and admittance into graduate programs. Students perceived plus/minus grading to have no effect on grade inflation or employment opportunities.

4. Does plus/minus grading significantly minimize grade inflation?

Studies on the effect of plus/minus grading on GPA distributions consistently show little effect on grade inflation. Studies conducted by Matthews (1997) used a computer simulation to predict the changes in average individual GPA by looking at actual GPAs under the plus/minus system and then comparing them to GPAs when the plus/minus suffixes were stripped. His conclusions were that 1) the average of all individual GPAs will not change because the pluses will cancel the minuses, and 2) a small deflationary effect would be felt in the A grade bracket, but it would not exceed a decrease in individual GPA of more than 0.08.

Similar studies were conducted at North Carolina State University with similar results (Gosselin, 1997). A Grade Task Force created by the Academic Council at Loyola University to study the effect of plus/minus grading refused even to study the issue of grade inflation, stating that it "is a separate issue from the grading system," and should be addressed separately (Loyola, 1998). Matthews (1998) came to the same conclusion, stating that no grading scale, regardless of its complexity, could override professor subjectivity in grading. Another recent study at Ball

State University on the actual GPAs of graduate students under the plus/minus grading system found no evidence that the plus/minus grading system has any effect on overall GPA (Malone, Nelson, Van Nelson, 2000). Furthermore, a report by Bressette (2002) reexamined studies by Matthews (1997, 1998) and Gosselin (1997) and reaffirmed that there was little chance of an absolute reduction in GPA with plus/minus.

An ex-officio member of the Ad Hoc Committee on Plus/Minus Grading and Mathematics Honors student, David Campbell, examined the effect of plus/minus grading on grades here at ECU using the same methodology used by Matthews (1997, 1998) and Gosselin (1997). He collaborated with the Registrar's Office to obtain grade data from the 2000-2001 and 2001-2002 academic years.

First, comparisons were made between the average undergraduate GPA in 2000-2001 when plus/minus grading was not in use and the average undergraduate GPA in 2001-2002 when plus/minus grading was in use (N=232,000 grades).

<u>Academic Year</u>	<u>Average Undergraduate GPA</u>
2000-2001 (no plus/minus)	2.74
2001-2002 (plus/minus)	2.75

Results suggest that actual undergraduate GPA increased by 0.01 grade points when plus/minus was used. Using a significance level of 0.05, this difference was not statistically significant. GPAs did not decrease, as would have been expected if plus/minus reduced grade inflation.

Secondly, actual GPAs were calculated for individuals enrolled in undergraduate courses during the 2001-2002 academic year. The pluses and minuses were then removed and GPA was recalculated under the standard 5-point scale (A, B, C, D, F). Differences in the actual GPA and stripped estimates were calculated. Although some students (35%) had a minimal negative change of up to 0.25 grade points when plus/minus was used, most students (59%) had either no change or a higher GPA when plus/minus was used!

In sum, Campbell's (2003) research suggests that the plus/minus grading system had little effect on GPAs and grade inflation on the ECU campus in 2001-2002.

5. What is the ECU experience of plus/minus grading (e.g., usage rates, satisfaction)?

ECU faculty were asked if they used the plus/minus grading system during the 2001-2002 academic year. Results indicate that 79% used plus/minus every semester, 9% used it some semesters, and 12% did not use it at all. Likewise, according to Campbell (2003), data from the Registrar's Office verifies a 13% non-compliance rate. These findings suggest that the majority of faculty did use the plus/minus grading system. However, of those who did use it, 19% did not use it as presented by the administration but rather modified the scale.

EKU faculty and students who were at EKU during the 2001-2002 academic year were asked on their surveys to indicate their level of satisfaction with plus/minus grading that year.

The faculty response was:

- 29% very satisfied
- 11% slightly satisfied
- 12% neutral
- 11% slightly dissatisfied
- 37% very dissatisfied

Collapsing categories, the data suggest that 40% of the faculty were satisfied, 12% were neutral, and 48% were dissatisfied with plus/minus grading.

The student response was:

- 7% very satisfied
- 10% slightly satisfied
- 23% neutral
- 21% slightly dissatisfied
- 40% very dissatisfied

Collapsing categories, the data suggest that 17% of the students were satisfied, 23% were neutral, and 61% were dissatisfied with plus/minus grading.

6. Do EKU faculty and students prefer to use plus/minus grading or not?

EKU faculty and students were asked their overall opinion of EKU re-establishing a plus/minus grading system. The faculty response was:

- 27% strongly in favor
- 14% slightly in favor
- 8% neutral
- 10% slightly opposed
- 41% strongly opposed

Collapsing categories, the data suggest that 41% of the faculty are in favor of re-establishing plus/minus grading, 8% are neutral, and 51% oppose re-establishing plus/minus grading at EKU.

The student response was:

- 9% strongly in favor
- 12% slightly in favor
- 11% neutral
- 23% slightly opposed
- 45% strongly opposed

Collapsing categories, the data suggest that 21% of the students are in favor of re-establishing plus/minus grading, 11% are neutral, and 68% oppose re-establishing plus/minus grading.

Demographic comparisons of the students suggest that students at ECU during the 2001-2002 academic year were most opposed to re-establishing plus/minus grading. There were no significant differences between males and females, full- and part-time students, Honors and non-Honors students, or scholarship and non-scholarship students.

Discussion

The results of the Ad Hoc Committee on Plus/Minus Grading suggest that less than half of ECU benchmarks and other Kentucky public universities use plus/minus grading. Those not using it cited reasons such as faculty/student resistance and financial and administrative costs. Most believed that plus/minus grading may enhance grading accuracy and student motivation, and a few believed it helped reduce grade inflation. However, those using it reported many drawbacks to plus/minus grading including more grade appeals, faculty questioning the distinctions between grades, and an increase in grade inflation.

ECU faculty dissatisfied with plus/minus grading had a slight majority (48%) over those satisfied with it (40%). Most faculty used it every semester that they were instructed to, but many did not use the scale mandated by the administration. Most faculty felt that the only benefit of plus/minus grading was enhanced grading accuracy, and most faculty perceived plus/minus grading to have a negative effect on scholarships, student motivation, student retention, faculty morale, and faculty attitudes toward grading. The Committee was particularly interested in these latter results suggesting that plus/minus grading harms faculty morale. Furthermore, most faculty (51% vs. 41%) were against re-establishing plus/minus grading on the ECU campus.

ECU students were strongly opposed to the plus/minus grading system. Of students on campus in 2001-2002, 61% were dissatisfied with plus/minus grading vs. 17% who were satisfied. The students perceived plus/minus grading to have no benefits but a negative effect on grading accuracy, scholarships, student motivation, student recruitment, student retention, and admittance into graduate programs. An important note is that the faculty do not perceive plus/minus grading to have a negative effect on recruitment and retention, but the students do. And are not the students the ones who would know best? Finally, most of the students (68% vs. 21%) were opposed to re-establishing plus/minus grading on the ECU campus.

Plus/minus grading was instituted on this campus in 2001-2002 in an effort to reduce grade inflation. However review of the Executive Summary of the Ad Hoc Committee on Grade

Inflation finds "As faculty begin to +/- grades in border line cases, a (mild) drop in campus wide GPA will result. Once faculty use of +/- grades stabilizes, no additional reduction in GPA will occur as presumably +/- grades will be a zero sum game (minus grades equaling the number of plus grades)." (p. 10) This indicates that the Ad Hoc Committee on Grade Inflation was aware of the fact that plus/minus grading would have only a very minimal effect on grade inflation.

Furthermore, the Ad Hoc Committee on Grade Inflation indicated in their report that 42% of the faculty would like the option of plus/minus grading, and that 50% were content with the standard grading system. Thus, the Committee recommended that faculty be given the *option* of using plus/minus grading. However, in 2001-2002, due to Faculty Senate action, all faculty were *required* to use plus/minus grading, many of whom were never in favor of plus/minus grading.

Committee Recommendations

In light of the findings of this research, the Ad Hoc Committee on Plus/Minus Grading cannot recommend continued use of plus/minus grading. Plus/minus grading was instituted on the EKU campus as a method of reducing grade inflation. Research from this campus, other campuses, and the scientific literature suggests that it does not accomplish that goal. In addition, members of the campus community perceive far more drawbacks than benefits of plus/minus grading. Furthermore, the majority of the faculty and students are opposed to re-establishing plus/minus grading on this campus. Therefore, the Ad Hoc Committee on Plus/Minus Grading recommends that plus/minus grading not be reinstated at EKU at this time.

It should be noted that several members of the Ad Hoc Committee on Plus/Minus Grading began their committee work in favor of plus/minus grading. However, the data that emerged from this study and from the literature convinced the entire Committee that plus/minus grading is not better than standard grading.

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The Committee also thanks David Campbell who conducted his Honors thesis on the EKU experience of the plus/minus grading system on grade inflation. As part of his thesis, David obtained grade data from the Registrar's Office, analyzed it, and presented it to the Committee.

Finally, the Committee would like to thank the 7 Kentucky public universities, the 16 benchmark universities, the 331 EKU faculty, and the 326 EKU students who participated in our

research.

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