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Do the Math! Grading Scales and Grade Inflation

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Do the Math! Grading Scales and Grade Inflation

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Abstract

- We've all heard the phrase "an A for effort," but what exactly does that mean? What effect do effort-based grades such as participation and pass/fail homework have on students' final grades? I argue that many instructors inadvertently inflate students' final grades through the grading scale set forth in the course syllabus. The higher the ratio of effort-based grades with respect to performance-based grades, the more inflated students' final grades become. Furthermore, effort-based grades have the biggest impact on students with the lowest performance-based grades.

Effort vs. Performance

Effort (Based on Quantity)

- Attendance
- Participation
- Pass/Fail Homework

Performance (Based on Quality)

- Graded Homework
- Quizzes
- Exams
- Oral Exam

Typical Grading Scales

Participation	10%
Homework	10%
Quizzes	20%
Chapter Exams	40%
<u>Final Exam</u>	<u>20%</u>
	100%

Participation	10%
Homework	10%
Compositions	10%
Quizzes	20%
Exams	30%
<u>Final Exam</u>	<u>20%</u>
	100%

Participation	10%
Homework	10%
Compositions	10%
Service Learning	10%
Quizzes	15%
<u>Exams</u>	<u>45%</u>
	100%

100% Performance

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 50% 60% 70% 80% 90% 100%

90% Performance 10% Effort (Presuming A for Effort)

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 55% 64% 73% 82% 91% 100%

80% Performance 20% Effort (Presuming A for Effort)

• Performance Grade:	50%	60%	70%	80%	90%	100%
• Final Grade:	60%	68%	76%	84%	92%	100%

70% Performance 30% Effort (Presuming A for Effort)

• Performance Grade:	50%	60%	70%	80%	90%	100%
• Final Grade:	65%	72%	79%	86%	93%	100%

60% Performance 40% Effort (Presuming A for Effort)

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 70% 76% 82% 88% 94% 100%

Summary

• Performance Grade:	50%	60%	70%	80%	90%	100%
10% Effort (Presuming A)	55%	64%	73%	82%	91%	100%
20% Effort (Presuming A)	60%	68%	76%	84%	92%	100%
30% Effort (Presuming A)	65%	72%	79%	86%	93%	100%
40% Effort (Presuming A)	70%	76%	82%	88%	94%	100%

Preliminary conclusions

- The grading scale set forth in the course syllabus may lead to serious grade inflation.
- The higher the ratio of effort-based grades with respect to performance-based grades, the more inflated students' final grades may become.
- Students with the lowest performance-based grades have the most to gain from effort-based grades.
- Students with the highest performance-based grades benefit the least from effort-based grades.

90% Performance 10% Effort (Presuming 0% for Effort)

• Performance Grade:	50%	60%	70%	80%	90%	100%
• Final Grade:	45%	54%	63%	72%	81%	90%

80% Performance 20% Effort (Presuming 0% for Effort)

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 40% 48% 56% 64% 72% 80%

70% Performance 30% Effort (Presuming 0% for Effort)

• Performance Grade:	50%	60%	70%	80%	90%	100%
• Final Grade:	35%	42%	49%	56%	63%	70%

60% Performance 40% Effort (Presuming 0% for Effort)

• Performance Grade:	50%	60%	70%	80%	90%	100%
• Final Grade:	30%	36%	42%	48%	54%	60%

Summary

• Performance Grade:	50%	60%	70%	80%	90%	100%
10% Effort (Presuming 0%)	45%	54%	63%	72%	81%	90%
20% Effort (Presuming 0%)	40%	48%	56%	64%	72%	80%
30% Effort (Presuming 0%)	35%	42%	49%	56%	63%	70%
40% Effort (Presuming 0%)	30%	36%	42%	48%	54%	60%

Preliminary conclusions

- The grading scale set forth in the course syllabus may lead to serious grade deflation.
- The higher the ratio of effort-based grades with respect to performance-based grades, the more deflated students' final grades may become.
- Students with the highest performance-based grades have the most to lose from effort-based grades.
- Students with the lowest performance-based grades suffer the least from effort-based grades.

Alternative Grading Scale

- RAW SCORE

Quizzes	25%
Unit Exams	50%
<u>Final Exam</u>	<u>25%</u>
	100%

- ADJUSTMENTS

Unexcused Absences -1 pt. each
Incomplete Homework -1 pt. each
Incomplete Compositions -2 pt. each
Up to -65 pts. = 35% F

100% Performance -10% Effort (Presuming 0% for Effort)

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 40% 50% 60% 70% 80% 90%

100% Performance -20% Effort (Presuming 0% for Effort)

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 30% 40% 50% 60% 70% 80%

100% Performance -30% Effort (Presuming 0% for Effort)

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 20% 30% 40% 50% 60% 70%

100% Performance -40% Effort (Presuming 0% for Effort)

- Performance Grade: 50% 60% 70% 80% 90% 100%
- Final Grade: 10% 20% 30% 40% 50% 60%

Summary

• Performance Grade:	50%	60%	70%	80%	90%	100%
-10% Effort (0%)	40%	50%	60%	70%	80%	90%
-20% Effort (0%)	30%	40%	50%	60%	70%	80%
-30% Effort (0%)	20%	30%	40%	50%	60%	70%
-40% Effort (0%)	10%	20%	30%	40%	50%	60%

The Carrot vs. the Stick

- RAW SCORE

Participation	10%
Quizzes	30%
Unit Exams	30%
<u>Final Exam</u>	<u>30%</u>
	100%

- ADJUSTMENTS

Complete all Assigned Work Below +3 pts.
Incomplete Homework -1 pt. each
Incomplete Compositions -2 pt. each
Up to -37 pts. = 63% D

Summary

• Performance Grade:	50%	60%	70%	80%	90%	100%
Carrot +3	53%	63%	73%	83%	93%	103%
-10% Effort (0%)	40%	50%	60%	70%	80%	90%
-20% Effort (0%)	30%	40%	50%	60%	70%	80%
-30% Effort (0%)	20%	30%	40%	50%	60%	70%
-40% Effort (0%)	10%	20%	30%	40%	50%	60%

Conclusions

- The grading scale set forth in the course syllabus can result in grade inflation AND deflation. The higher the ratio of effort-based grades with respect to performance-based grades, the more inflated and deflated students' final grades may become.
- Typically, students with the highest performance-based grades stand to gain the least and lose the most from effort-based grades, while students with the lowest performance-based grades stand to gain the most and lose the least.
- The alternative grading scale prevents grade inflation, but can still lead to grade deflation. This scale is more egalitarian than traditional grading scales, and the addition of the carrot can help motivate students.
- It is up to each instructor to find the right balance between effort and performance in the grading scale. So do the math!