

Abstract Submitted  
for the MAR09 Meeting of  
The American Physical Society

**How Physics Test Scores Reflect the Students' Time Spent**

MARIA BABIUC-HAMILTON, Marshall University, Huntington, WV, TIM HAMILTON, Shawnee State University, Portsmouth, OH — We found that exam scores in introductory physics courses show a wedge-shaped pattern when plotted against the order they are turned in. The article will explore some of the factors contributing to this pattern and will propose guidelines to help determine an ideal test time limit, aimed at students with good perseverance and average skill. The reason for this pattern appears to stem from a combination of students' skills and perseverance. The first students to finish tend to have either the best or worst grades in the class, with few in between. Students with the highest skills (knowledge, memory, problem-solving skills) need little time to finish, and they have the confidence to turn in the test quickly, before other students. Good students with moderately high skills tend to take longer. The later submissions gradually converge to a grade close the class average. Results of over 200 grades from students in different introductory physics classes, from two universities, taught using a variety of methods, when collected and analyzed, show the same wedge-shaped pattern. This seems to indicate a universal component of the pattern, which does not depend on the teaching methods or the test structure. From our analysis, we aim at deriving what an ideal test time limit would be, at which students hit a point of diminishing returns.

Maria Babiuc-Hamilton  
Marshall University, Huntington, WV

Date submitted: 14 Nov 2008

Electronic form version 1.4