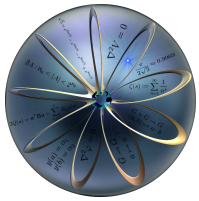

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Lazear model of a private school

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The economist Edward P. Lazear defined a theoretical of a (private) profit maximizing school and was able to derive some interesting conclusions from the model. Here we describe the model.

The school has a fixed number, Z of students. The cost of a teacher is $W > 0$. Each student is assumed to be not disruptive with a probability p. So if the class has n students the probability of "peace in the classroom" is p^n. Only when there is peace can any learning take place. The school charges according the class size and all students in the class of size n pay the same amount. Assuming that the value of a unit of learning is $V > 0$ and that there are m classes, the average class size is $n = Z/m$. The expected revenue then is $Vmnp^{Z/m} = VZp^{Z/m}$. And the cost for these m classes is Wm. Then the expected profit is $VZp^{Z/m} - Wm$. This is a function to be maximized.

Using this theoretical framework Lazear was able to show:

1. As p increases it is optimal to use fewer classes, so that class size increases.

2. As W increases it is optimal to use fewer classes, so that class size increases.

Lazear briefly considered an extension of the model to the case where there are two types of students, having different disruption probabilities. He concluded that if the school wants to maximize revenue it would segregate the students, that is, there would be no mixed classes.

References

[LAZ] Edward P. Lazear, *Educational Production*, Quarterly Journal of Economics, CXVI(2001), 777-801.