

Young, Gifted and Lazy? The Role of Ability and Labor Market Prospects in Student Effort Decisions

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Extended Abstract

A major question for scientific research on human behavior is when individuals strive. The economic approach suggests that individuals provide high efforts whenever the expected benefits of an activity exceed the expected costs. However, little do we know about the determinants of effort outside of experimental laboratories and about situations when individuals – instead of providing high efforts to maximize their economic gain – make the decision to simply lean back. Whereas individuals with particular potential and great prospects may in one case show high motivation to provide extraordinary performance, in the other case, a positive outlook may actually deter effort levels, as it is possible to benefit from reduced effort costs while still obtaining a satisfactory level of achievement. By focusing on students in the system of higher education, the aim of our paper is to study individual effort decisions, which allows us to not only shed light on the determinants of human behavior in this particular educational context, but also beyond.

The decision situation faced by students in the system of higher education has a particular facet that makes it very interesting from an economic standpoint: Both the society and the individual student benefit from educational achievement. The more of it can be attained, the higher are the

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individual labor market earnings because of increased human capital, which thereby fosters overall economic prosperity. To achieve exactly that and to improve educational output, individual effort levels are the major determinant on which students can decide upon. This leads to a scenario, in which students have incentives for putting high efforts into studying, which benefits both the economy and society. In reality, however, there are indications for lacking effort levels among students, such as declining amounts of time spend on studying and increasing study durations in numerous countries. This raises the question what the determinants of study behavior actually are, so that it is possible to identify the drivers of students' commitment in performing well in the education system (or lack thereof).

Beyond improving our understanding of human behavior in general and university students' in specific by providing a theoretical model of student effort decisions, our study has several features through which we can contribute to and expand ongoing research. As one potentially important aspect, we expand the notion in what ways student can provide effort by considering multiple dimensions of it. Whereas previous educational studies often focus on study time measured via lecture attendance, the role of this factor in educational achievement appears to be very unclear. Given the heterogeneity of empirical findings in this context, we scrutinize whether study time satisfyingly captures individual effort and the underlying assumption that investing the same amount of time means investing the same amount of effort. Arguably, one and the same hour spent in the library or in the lecture room may constitute in one case focused learning, but not in the other. We therefore propose a distinction into a quantitative and a qualitative dimension of effort in order to learn more about this complex factor that effort certainly is. While in our theoretical discussion we distinguish between study time (quantitative dimension) and effort per study time unit (qualitative dimension), we attempt to capture the quantitative component via comprehensive time-use data and the qualitative component via subjective data on self-assessed effort levels in our empirical investigation. In regard of the key student input ability, we can exploit data from comprehensive competence testing of university students to establish a measure that allows us to inspect this particular determinant of university students' behavior without having to rely on proxies such as previous grades, which are likely affected by (past) effort decisions. This is obviously a particular problem for any attempt to find out about the actual impact of individual ability on effort. Finally, we provide evidence on the direct effects of job market prospects on student effort, as the outlook on future earnings reflects the channel through which students take their economic gains of studying into account. We thereby elaborate on previous work which argue that subjectively expected returns to education are a key determinant for university students decision-making regarding educational attainment.

In our theoretical modeling of student decision-making, we make some basic assumptions that conform to the previous literature and allow us to establish testable predictions. Students decide about both effort dimensions anticipating that higher effort is associated with a utility decline today, but improves educational achievements and hence increases expected income and utility after studying. Whether high-ability students provide less or more effort compared

to low-ability students depends on two factors. First, considering each effort dimension separately, high-ability students have an incentive to increase effort, such as study time (at the expense of leisure), because this raises utility in the future, i.e. the substitution effect (SE). At the same time, however, high-ability students have an incentive to reduce effort because their high abilities per se ensure a relatively good educational achievement and thus a relatively high level of expected income, i.e. the income effect (IE). Second, the way both effort dimensions are interlinked does play a role. If they were complements, high-ability students that provide high effort per time unit would also choose a high study time, compared to low-ability students. If both dimensions were substitutes, however, high effort per time would come at a price of lower study time and vice versa. These mechanisms also hold for our second determinant, i.e. job market prospects.

Our model shows that the SE dominates the IE in general if we compare students with different job market prospects. Assuming that both effort dimensions are complements, our model therefore predicts that students with relatively good job market prospects increase effort (in both dimensions), relative to students with relatively bad labor market prospects. With regard to our second determinant ability, it is in general ambiguous whether the SE or the IE dominate. To find a testable prediction, we assume a Cobb-Douglas educational production function (EPF), which implies that the SE outweighs the IE and that both effort measures are complements. As such, we expect that high-ability students choose a higher study time and provide higher effort per time unit, compared to low-ability students.

For the empirical analysis, we use novel data from a broadly conceived investigation of students in Germany's system of higher education, the National Educational Panel Study (NEPS), which allows testing our predictions. The students' cohort of the NEPS has not been used for similar purposes so far and allows us to inspect the role of ability, as an example, in ways not possible in most cross-subject datasets. We make use of data on study beginners of the winter semester 2010/2011, which has several advantages, such as that effort decisions of those students are not affected by their own study success. To inspect deeper the role of job market expectations for student behavior, we merge the NEPS data with data from official unemployment statistics at the regional level.

The results from analyzing the NEPS data reject the prediction according to which ability positively affects effort levels. Instead, the evidence conforms to the notion that high-ability students use their advantage over the low-ability to obtain additional utility by having more leisure time. In line with that, we find that the higher the ability is the lower self-assessed effort levels and weekly self-study hours are. As the latter is the key factor determining educational achievement, more than attendance during courses, this empirical result supports the picture of the 'lazy genius' who puts comparatively little into studying. Going back to our model, this speaks for a relatively strong IE and/or a relatively weak SE. Regarding job market prospects, we not only look at standard regression results but also apply an instrumental variable (IV) approach to address the potential reverse causality between effort and labor market prospects. To this aim, we make use of official unemployment

data reflecting current regional labor market conditions at the time when the NEPS interviews were carried out. We merge the data using information on school location and prospective jobs. The results from applying this approach align with those from running standard regressions and suggest that great job prospects positively influence effort, which confirms our theoretical prediction. Vice versa, we interpret our finding in such a way that not having good prospects may frustrate students' motivation for putting in high efforts into studying, which may contribute to the phenomenon of prolonged study durations, as argued by other researchers. By substantiating this argument with causal evidence, we can contribute to this particular discussion and establish policy implications.