Factors influencing the performance of non-economics majors in an introductory economics course

Eleanor Denny *

Department of Economics, Trinity College Dublin, Dublin 2, Ireland

Abstract

This research compares factors which influence success for economics and non-economics majors in an introductory economics course. Results show economics majors achieve 5% higher grades which may indicate increased motivation and interest by these students. Performance at secondary school and prior economics study are positively related to success, and mathematics ability is the largest determinant of success across both economics and non-economics majors. History, politics and law majors do significantly better in macroeconomics than microeconomics and overall outperformed all other non-economics majors. Computer science and sociology students were the least successful with computer science students doing particularly badly in macroeconomics.

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Teaching introductory economics to students who have not chosen to major (or minor) in economics is a component of teaching at most Economics Departments, and in many cases this introductory economics course is compulsory with the majority of students not continuing with economics in their degree program (Siegfried, 2000a,b). Problems with these courses often include large classes with very diverse skills and interests, high failure and disengagement rates, and often little actual interaction with the subject material (Riemann, 2004; Caviglia-Harris, 2003).

* Tel.: +353 1 8961522; fax: +353 1 6772503.
E-mail addresses: denny@tcd.ie, edenny@gmail.com.
Despite these acknowledged challenges associated with teaching economics to students who have not chosen economics as part of their degree program, there is little evidence in the literature on the factors influencing performance on a compulsory course which is unrelated (in the students’ minds) to their chosen course of study. In particular, despite the large number of introductory economics courses offered to non-economics majors around the world, there has been very little research into factors influencing performance by these students in economics courses and how they differ from students who have chosen to major or minor in economics.

This article examines performance (measured by final grade) in a large 'Introduction to Economic Policy' course over a four year period. This course has on average 320 students each year, of whom, on average, just 11.5% have chosen to study economics as part of their degree program. These students are referred to throughout this paper as economics majors. None of the remaining students continue with economics beyond this first introductory course (these students are referred to as 'non-economics majors' throughout this paper, however, it should be noted that these students are not minoring in economics either, their degree programs do not include any economics components other than this first introductory module). This module is a compulsory module for all students regardless of whether they have chosen to major in economics or in other subjects. This research will examine the relationship between student performance in this course and student attributes such as performance at secondary school and subject choice at secondary school for both cohorts of students. The research also examines if there is a difference between the Micro and Macro elements of the course in terms of factors influencing student performance and examines whether the choice of major for the non-economics students impacts on performance in this course.

The following section discusses the existing literature in this area which is followed by the methodology, a description of the institutional setting, the course itself and the data available. The results and discussion section is then presented with the main conclusions.

1. Literature review

Given the high levels of non-engagement by students in introductory economics courses, a large body of literature has developed surrounding performance on these courses. In this paper the focus is on the performance of students majoring in disciplines other than economics, but this research considers many of the same factors influencing success at economics which have been identified in the literature such as general performance at secondary level, maths ability, and prior study of economics. In addition factors such as gender, micro versus macro economics grades and other subject selection at secondary level (such as business or accountancy) is considered. This section discusses the relevant literature on each of these factors. For the most part, all of the literature reviewed focuses on students who have chosen to study economics as part of their degree programs, thus, one of the key contributions of this paper will be to explore whether these same relationships hold for non-economics majors taking an economics course.

It is widely accepted that higher GPA scores lead to better results in economics courses, for example see Clauretie and Johnson (1975), Park and Kerr (1990), and D’Agostino and Bonner (2009). Perhaps more interesting than previous academic success is the impact specifically of mathematics ability on introductory economics grades (Ballard and Johnson, 2004; Johnson and Kuennen, 2006). According to Lagerlöf and Seltzer (2009), the level of and performance in secondary-school math has strong predictive power for students’ performance in university-level economics, a result which is supported by Swope and Schmitt (2006). Anderson et al. (1994) showed the importance of secondary school calculus in later economics performance and Ballard and Johnson (2004) show that quantitative skills are the most important determinant of success in microeconomics.

In terms of the importance of prior economics study on introductory economics success, Faulk et al., 2012 find a somewhat counterintuitive result that performance in high school economics is not a significant determinant of University economics grade. This result corroborates findings that students taking high school economics have a relatively low level of achievement as measured by the Test of Economic Literacy (Walstad, 2001). Similarly Ballard and Johnson (2004) find a negative (but not significant) relationship between introductory economics grades and whether economics was taken at high school. It is possible that this result is driven by overconfidence and lower levels of motivation.
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