

# Teachers' Influence on Individuals' Postgraduate Educational Aspirations

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**Abstract**—This paper hypothesizes that positive attitude towards education can be nurtured and developed during the childhood period. Hence, the research employs longitudinal data to examine the impact of high school teacher characteristics on the postgraduate educational aspirations of their former students 12 years after they were first interviewed. The results indicate that individuals' postgraduate educational aspirations are positively related to students' perceptions of their former high school teachers. Individuals who believe their teachers were good are likely to pursue postgraduate education.

**Keywords**—*aspiration, postgraduate, teacher*

## I. Introduction

A large volume of research and a number of publications have concluded that teacher quality is the most salient educational factor predicting student achievement measures such as improvement in mathematics and verbal skills, psychological development, and learning growth (Ferguson 1998, Hanushek et al. 1999, Darling-Hammond 2000, Bressoux and Bianco, 2004). These measures are short-term outcomes or gains that have been made from one semester to another or from one grade to another. Little is known with regard to longer-term effects of teachers. This is somewhat puzzling when anecdotal evidence would lead us to believe that teachers have a long-lasting impact on their students' lives for years to come. The need for increasing accountability and results requires educational resources to have a consequent and sequential impact throughout educational systems to create cost-efficiency and to justify the long-term investments of taxpayers in education. Do teachers have a long-term impact on students? This is the main question the study attempts to address.

The current research aims to fill a gap in the teacher research literature by examining longer-term impact of teachers on their former students 12 years after the students were first interviewed. More specifically, the study employs the fourth follow-up of the United States' National Education Longitudinal Study of 1988 data to examine the lifelong learning attitudes and habits of this 1988 eighth-grade cohort when they were 26 years old, and to estimate teacher effects on their students' attitudes towards lifelong learning. In this study, the research hypothesizes that individuals educated by a good teacher were more likely to pursue a higher credential in the future. How and to what extent do teachers influence the likelihood of their students' aspiration to earn a higher credential in the future? This research aims to answer this research question.

## II. Literature Review

### A. Long-Term Impact of Teachers

Researchers often define long-term student achievement very differently. For K-12 researchers, long-term student achievement usually means students' basic intellectual and verbal skills and physiological development that have progressed from one semester to another or from one grade to another (Bressoux and Bianco 2004, Heck 2007). Research on this type of long-term outcomes is prevalent in the fields of early childhood education, elementary education, and high school education (e.g. Entwisle and Hayduk 1988). Often based on the analysis of the economics of education, student achievement is referred to as an educational output that is a product of educational inputs such as school resources, teacher quality, and individual attributes (Hanushek 2006). As a result, research findings with regard to high school teacher effect are more prevalent in K-12 research than higher education research.

For higher education researchers, long-term student achievement generally refers to college entry, college graduation, job satisfaction, career aspirations, and yearly earnings (e.g. Baum and Payea 2004). Predictors of student achievement in higher education are college environmental variables such as faculty-student ratio, faculty-student interaction, peer interaction, college intervention programmes, college sense of belonging, academic integration, and social integration (Astin 1993).

Little research has investigated the linkage between K-12 educational inputs (i.e. teacher quality) and post-secondary student achievement, and even the existing studies on this topic often reveal contradictory findings about the relationship. Most research has found that over a career, a private return to higher education of a person relates significantly to the quality and quantity of high school inputs (e.g. Card and Krueger 1992). Card and Krueger (1992) found that teacher related variables such as pupil-teacher ratio and relative teacher wages affected the earnings of students born between 1920 and 1949. Using teacher education and individual traits as proxies for teacher quality, Card and Krueger also found that these two teacher quality variables significantly affected students' earnings.

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## B. *Student Attitudes Towards Education*

Despite its growing importance, we know very little about what factors influence attitudes towards postgraduate educational aspirations. Attitude as a concept focuses on the way a person believes, perceives, and acts. According to Olatunde (2009), attitudes towards learning are directly linked to learning experiences and school context. More specifically, students learn to form their attitudes towards learning by following the example of their role models, which often are their teachers in a classroom setting (Olatunde 2009). Olatunde underlines the point that students constantly observe teachers' beliefs about learning and whether their teachers think learning is important or not important, difficult or easy, and useful or useless. Students later form their own attitudes towards learning that oftentimes reflect their own teachers' attitudes. In other words, the way teachers teach, behave, or feel in the classroom can be more influential to students' attitudes towards learning than what is actually being taught. As a result, it is reasonable to believe that teachers who regularly express their appreciation towards literacy are likely to influence their students to become avid learners for years to come. Furthermore, evidence reported by Boaler and Greeno (2000) showed that positive attitudes of students towards mathematics were a significant determinant of students' decisions to take more advanced mathematics courses that were not compulsory.

Hence, the objective of this current research is to see if a link can be found between teacher quality and students' educational aspirations after a long period of time. The National Education Longitudinal Study of 1988 data provide a unique research opportunity to analyse school context (i.e. teacher quality) and its relationship to the students' attitudes years later. The results may shed light on which teacher's attribute plays a significant role in shaping the attitude of students towards learning in the long run.

## III. Theoretical Framework

Alexander Astin was one of the earliest education researchers to use educational production functions in higher education research. Astin's version of production function is reflected in his IEO (Input-Environment-Output) model (1977). This is a commonly used analytical framework for educational evaluation and assessment activities in the classroom setting, and the IEO framework organizes the variables used in this study. In Astin's IEO framework, students' individual backgrounds and characteristics are included in the input (I) component (Astin 1977). Astin stated that students' individual attributes have both direct and indirect impacts on student outcomes. By interacting with social and structural support, these attributes subsequently interact with the multifaceted college environment, and this interaction then influences student outcomes. This study uses individual attributes (e.g. gender, parental education, high school achievement) to represent Astin's I component. Astin's environment (E) component includes within-school circumstances that create student involvement opportunities

such as curricula, instructors, campus climate, friends, extra-curricular activities, and faculty-student ratio (Astin 1977, 1993). Similar to Astin's framework, institutional and teacher characteristic variables are used to proxy the environmental context. Output (O) variables commonly used to test Astin's IEO model are student achievement indicators such as GPAs, school retention, and personal development. Unlike Astin's original model, the outcome variable used in this study is high school graduates' educational aspirations. The research's educational production function, which includes student backgrounds (I), teacher and institutional characteristics (E), and students' attitudes towards lifelong learning (O).

The general form of the model is  $Y_{ij} = \beta X_{ij} + \alpha S_j + \varepsilon_{ij}$ , where subscript i denotes individuals and j denoted institutional factors such as school.  $Y_i$  denotes attitudes towards postgraduate education of individual i, X represents individual and family background variables of students, S represents institutional and teacher characteristics, and  $\varepsilon$  is the random error term. The ordinal regression method is used to model the relationship between the dichotomous outcomes and their predictors. This method provides the probability of the occurrence rate as a function of independent variables. For the purpose of this study, the method provides the probability with values between 0 and 1 of their pursuit of a higher credential in the future.

## IV. Methods

### A. *Sample and Instrument*

Data used in the analyses are drawn from the National Education Longitudinal Study of 1988, a nationally representative survey of 24,000 8th-grade students. A subset of these students was resurveyed in 1990 (1st follow-up), 1992 (2nd follow-up), 1994 (3rd follow-up), and 2000 (4th follow-up). The research uses the 4<sup>th</sup> follow-up survey data, which contain information about activities that the participants had done 12 years after they were first interviewed. In 2000, most participants in the dataset were 26-year-old adults, had finished college if they had ever entered it, and had begun their careers. The questionnaires asked students about a wide range of information such as family characteristics, school characteristics, teacher characteristics, educational aspirations, and a variety of student perceptions (NCES 2000).

### B. *Variables and Data Analysis*

The dependent variable is a dichotomous variable (1= yes, 0 = no): whether or not individuals planned to pursue more academic credentials in the future after undergraduate education. There are three sets of independent variables: teacher characteristics, institutional characteristics, and individual characteristics. The main independent variables are teacher characteristic variables including teacher gender (1 = female, 0 = male); teaching experience (0= no teaching experience, 1= 1-3 years, 2 = 4-6 years, 3 = 7-8 years, 4 = 10-

12 years, 5 = 13-15 years, 6 = 16-18 years, 7 = 19-21 years, 8 = 22-24, and 9 = more than 25 years); standard certification attainment (1 = yes, 0 = no); and master's degree attainment (1 = yes, 0 = no). Students' perceptions towards their high school teachers are also included in the analyses as one of the measures of teacher quality. The original question used to code these variables asked students about the extent to which they thought their teacher was a good one (1= strongly disagree, 2 = disagree, 3=agree, 4 = strongly agree). To simplify the logistic regression interpretation, this variable is recoded into a dummy variable (1 = either strongly agree or just agree that my teacher is good; 0 = otherwise).

Other independent variables included in the analyses are students' characteristics including gender (1 = female, 0 = male); socioeconomic status (1 = below the 25th percentile rank for SES; 2 = at least 25th percentile but below 75th rank for SES; 3 = at 75th rank for SES); parental education (0 = no education, 9 = Ph.D.); and high school achievements (i.e., 10th reading and mathematics test score quartiles). Other schooling variables include school location, school type, and diversity within school.

## V. Results

The study finds that individuals' attitudes towards postgraduate education are related to how they perceived the quality of their teachers. Individuals who perceive that they were taught by a good teacher are more likely to participate in lifelong learning activities when they are older. In regard to their educational aspirations, the findings show that certain teacher characteristics have an influence on their students' desire to pursue a higher degree than the one they currently hold. More specifically, individuals taught by good teachers are almost twice more likely to pursue more academic credentials than their peers (odd ratios = 1.914) (Table 1). In addition, individuals taught by a female teacher are more likely than their male counterparts to pursue more academic credentials in the future (odd ratio = 1.022).

The results also indicate that various student attribute inputs are significantly associated with students' aspirations to pursue more academic credentials in the future. For example, individuals with highly educated parents are more likely to pursue more academic credentials in the future (odd ratio = 1.199). Individuals with higher mathematics test scores (odd ratio = 1.079) are likely to pursue more academic credentials in the forthcoming years. The probability of pursuing more credentials for female is higher than that of males (odd ratio = 1.995).

Table 1. Factors influencing students' attitudes towards life-long learning

	Aim to earn more academic credentials in the future	
	Odds Ratio	SE
<b>Teacher characteristics</b>		
Student's perception of a good teacher	1.914*	0.083
Teaching certification	1.002	0.092
Female teacher	1.022**	0.259
Minority teacher	0.457	0.081
Teaching experience	0.868	0.054
<b>School Characteristics</b>		
Urban	0.343	1.149
Teaching faculty with a master's degree	1.163	0.122
Minority proportion	0.823***	0.048
<b>Individual Characteristics</b>		
Parental education	1.199***	0.031
SES	1.351**	0.161
Female	1.995***	0.002
10 <sup>th</sup> grade math test scores	1.254*	0.045
10 <sup>th</sup> grade reading test scores	2.371	0.296

## VI. Conclusion

Two major conclusions can be drawn from this study. First, students' attitudes towards postgraduate education are positively related to students' perceptions of their former high school teachers. More specifically, individuals who believed their teachers were good are likely to pursue more academic credentials in the future. There is also a relationship between teacher gender and their students' academic aspirations. Consistent with previous research, the study finds no impact of teacher licensure on student achievement. The second main finding is that student backgrounds and prior school achievement are associated with their views on postgraduate education. Students with prior excellent test scores and those from higher socioeconomic backgrounds are more likely than their peers to have a high level of educational aspiration.

## References

- [1] Astin, A. W., (1977), *Four critical years* (San Francisco: Jossey-Bass).
- [2] Astin, A. W., (1993), *What matters in college? Four critical years revisited* (San Francisco: Jossey-Bass).
- [3] Baum, S., and Payea, K., (2004), *Education pays 2004: The benefits of education for individuals and Society* (New York: College Board).
- [4] Boaler, J., and Greeno, J. G., (2000), *Identity, agency and knowing in mathematics worlds*. In J.

- [5] Boaler (Ed.), *Multiple Perspectives on Mathematics Teaching and Learning* (Connecticut: Ablex), pp. 171–200.
- [6] Bressoux, P., and Bianco, M., (2004), Long-term teacher effects on pupils' learning gains. *Oxford Review of Education*, 30(3), 327–345.
- [7] Card, D., and Krueger, A. B., (1992), Does school quality matter? Returns to education and the characteristics of public schools in the United States. *Journal of Political Economy*, 100, 1–40.
- [8] Darling-Hammond, L., (2000), Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives*, 8(1), 1–50.
- [9] Entwisle, D. R., and Hayduk, L. A., (1988), Lasting effects of elementary school. *Sociology of Education*, 61(3), 147–159.
- [10] Ferguson, R., (1998), Can schools narrow the Black-White test score gap? In C. Jencks and M. Phillips (eds.), *The Black-White Test Score Gap* (Washington, DC: The Brookings Institution), pp. 318–374.
- [11] Hanushek, E., Kain, J., and Rivkin, S., (1999), Do higher salaries buy better teachers? Working Paper No. 7082 (Massachusetts: National Bureau of Economic Research).
- [12] Heck, R. H., (2007), Examining the relationship between teacher quality as an organizational property of schools and students' achievement and growth rates. *Educational Administration Quarterly*, 43(4), 399–432.
- [13] Olatunde, Y. P., (2009), Relationship between teachers' attitude and students' academic achievement in mathematics in some selected senior secondary schools in southwestern Nigeria. *European Journal of Social Sciences*, 11(3), 364–369.
- [14] K. Elissa, "Title of paper if known," unpublished.
- [15] R. Nicole, "Title of paper with only first word capitalized," J. Name Stand. Abbrev., in press.
- [16] Y. Yorozu, M. Hirano, K. Oka, and Y. Tagawa, "Electron spectroscopy studies on magneto-optical media and plastic substrate interface," *IEEE Transl. J. Magn. Japan*, vol. 2, pp. 740–741, August 1987 [Digests 9th Annual Conf. Magnetics Japan, p. 301, 1982].
- [17] M. Young, *The Technical Writer's Handbook*. Mill Valley, CA: University Science, 1989.