



Possible economic benefits of full-grade acceleration



Russell T. Warne

^a Department of Behavioral Science, Utah Valley University, 800 W. University Parkway MC 115, Orem, UT 84058, United States

ARTICLE INFO

Action Editor: Lisa Sanetti

Keywords:

Full-grade acceleration
Gifted education
Longitudinal studies
Income
Meta-analysis

ABSTRACT

Full-grade acceleration is an intervention in which students finish the K-12 curriculum at least one year early, usually due to early entrance to kindergarten, grade skipping, or early graduation from high school. Many studies have shown benefits during childhood for accelerated individuals, but few studies have examined outcomes of acceleration in adulthood. In this study data from five longitudinal datasets were combined to compare adult incomes of accelerated and non-accelerated subjects after controlling for five important childhood covariates. Results showed that accelerated adults earned 4.66% more per year ($d = 0.044$). Income differences between accelerated and non-accelerated groups were larger for women than men. A conservative estimate is that there is a \$72,000 lifetime earnings difference between accelerated and non-accelerated subjects, though this study cannot show a causal association between acceleration and increased income.

1. Introduction

“It seems that the schools are more opposed to acceleration now than they were thirty years ago. The lockstep seems to have become more and more the fashion, notwithstanding the fact that practically everyone who has investigated the subject is against it” (Terman, 1954, p. 226).

These words—published just two years before the end of Lewis Terman's life—seem to apply in the 21st century to the disconnect between research on and practice of academic acceleration (see Pressey, 1946, 1955, for similar sentiments). Just as in the 1950s, the consensus among researchers is that academic acceleration is a highly effective intervention for bright students (e.g., Assouline, Colangelo, VanTassel-Baska, & Sharp, 2015; Steenbergen-Hu, Makel, & Olszewski-Kubilius, 2016). Yet, school personnel are generally committed to a “lockstep” education in which children are exposed to curricular material on the basis of their age—and not when students are academically ready for new material (Croft & Wood, 2015; Siegle, Wilson, & Little, 2013).

Academic acceleration is the practice of allowing a child to learn academic curriculum at an age younger than is typical. Southern and Jones (2015) listed 20 ways that students can experience academic acceleration. These acceleration methods can start in early childhood (e.g., early entrance to kindergarten) or as late as postsecondary education (e.g., acceleration in college or a combined bachelor's/graduate degree).

Just as academic acceleration can occur at any time in a person's education, forms of acceleration have a high variability in popularity. For example, Advanced Placement courses—a form of acceleration for high schoolers that focuses on one scholastic subject—are offered at approximately 90% of school districts (Callahan, Moon, & Oh, 2013), whereas early entry to kindergarten is completely banned in 13 states (National Association for Gifted Children & the Council of State Directors of Programs for the Gifted, 2015). Indeed, the decentralized nature of the American education system means that the decision of whether to offer an acceleration option—and to whom it is offered—usually varies district to district and from state to state (Callahan et al., 2013; National

E-mail address: rwarne@uvu.edu.

<http://dx.doi.org/10.1016/j.jsp.2017.07.001>

Received 28 November 2016; Received in revised form 26 April 2017; Accepted 1 July 2017

0022-4405/ © 2017 Published by Elsevier Ltd on behalf of Society for the Study of School Psychology.

Association for Gifted Children & the Council of State Directors of Programs for the Gifted, 2015). As a result, even widely empirically well-supported interventions can be rare. For example, in one study with a representative sample of American students, the researchers found that the nationwide grade skipping rate for children in Grades 1 through 8 is 0.25% per year (Warren, Hoffman, & Andrew, 2014, p. 435), meaning that (on average) only 1 in 400 children skip a grade per year.

Thus, it is fair to say that acceleration is an umbrella term for a wide range of practices that vary from one another in their form, rationale, timing, and administrative support. Regardless of the form that acceleration takes, the practice is widely supported by the empirical literature. Rogers (2015) meta-analyzed studies on 18 forms of acceleration and found almost universally positive academic, social, and psychological consequences for gifted children who experienced academic acceleration (see also Rogers, 2004, 2007; Steenbergen-Hu & Moon, 2011), although there were exceptions to this general body of literature (e.g., Hoogeveen, van Hell, & Verhoeven, 2009). Likewise, a recent second-order meta-analysis (Steenbergen-Hu et al., 2016) showed that accelerated children, on average, perform academically better than their age peers and match their older classmates in academic achievement without unintended negative socioemotional consequences. Truly, Terman's (1954) statement that “practically everyone who has investigated the subject [of lockstep education, compared to academic acceleration] is against it” (p. 226) applies 60 years after his death.

Because there is so much variability in acceleration and a large number of potential outcomes for students, it would be impossible in a single article to study every form of acceleration. Therefore, the current study focuses on forms of full-grade acceleration, which include grade skipping, early entrance to kindergarten, and early graduation from high school. Assuming that a child progresses through the remaining portion of the K-12 curriculum with no delays (e.g., grade repetitions), then children who experience these forms of acceleration will graduate from high school at least one year earlier than their age peers. As a result, full-grade acceleration options have the potential to result in long-term outcomes for accelerated students.

One relevant outcome that researchers have studied with full-grade acceleration is income in adulthood. Prior researchers have applied multiple theoretical frameworks to study of the impact of acceleration on adult income. McClarty (2015) applied Simonton's (1988) theory of creative output as being a product of average creative output, length of career, and age of career start. Instead of creative products, McClarty (2015) argued that the same theory could apply to lifetime earnings. In this view, an early career start lengthens the total amount of time that a person has to be productive in their career. This early start should increase total creative output (in Simonton's view) and total earnings (in McClarty's view) across the lifespan.

Warne and Liu (2017) had two theoretical justifications for investigating an association between academic acceleration and income in adulthood. The first was based on research (e.g., Park, Lubinski, & Benbow, 2013) that accelerated children were more likely to earn a graduate degree in adulthood, which would be correlated with higher incomes. Although Warne and Liu (2017) explicitly stated that the correlation among these variables did not imply causation among them, they stated, “Regardless of the causal mechanisms at work, it would not be surprising if grade skippers later were more likely to obtain high levels of education, which then led to greater incomes” (p. 2). Warne and Liu's second theoretical justification was based on the research on talent development (e.g., Subotnik, Olszewski-Kubilius, & Worrell, 2011) and expertise (e.g., Ericsson, Roring, & Nandagopal, 2007). Scholars in these areas have shown that expertise often requires a great deal of time to develop. Applying this fact to academic acceleration, Warne and Liu stated,

By embarking on higher education and their careers earlier, grade skippers may earn higher incomes simply because they are further along in their careers and have developed their skills more fully. This extra time may also help them build a professional network or obtain the human capital needed to receive a high paying job. (2017, p. 2).

Though this is not a new idea (see Pressey, 1946), scholars who subscribe to this viewpoint argue that starting a career earlier increases the time available to a worker to make major contributions to their field and reap greater rewards—including greater income—from their efforts.

Thus, there may be a variety of theoretical reasons why acceleration could be correlated with income in adulthood. But studying the economic impacts of academic acceleration also has a basic, pragmatic justification because higher income is associated with a variety of positive life outcomes (e.g., access to medical care, longevity, providing one's children with educational opportunities). Therefore, the status of acceleration as a correlate with higher income is, in its own right, a topic worthy of scientific inquiry.

2. Prior research: three critical studies

There are three relevant studies about the association between educational acceleration and adult income; these were conducted by Cronbach (1996), McClarty (2015), and Warne and Liu (2017). Cronbach and Warne and Liu studied Terman's (1926) data from his longitudinal sample of gifted children using different statistical techniques. In both articles accelerated students (defined as students who graduated from high school before age 17) earned higher incomes in adulthood than non-accelerated students who were matched on a series of covariates. Cronbach (1996) found that this income advantage was limited to subjects who later earned a master's or doctorate degree. However, Cronbach did not report any effect sizes in his study. On the other hand, Warne and Liu (2017) found that accelerated men had an income that was an average of 9.35% greater than non-accelerated students' adult incomes, which was equal to a Cohen's *d* value of 0.102. For women in Terman's sample, the differences were much more subtle. Accelerated women had incomes that were an average of 0.42% higher than non-accelerated women (*d* = 0.002). Moreover, these differences were not constant across the lifespan: for men the differences started to decline when the accelerated students were in their 60s; for women the small income differences closed when the average subject was in her late 50s (Warne & Liu, 2017).

Although Warne and Liu's (2017) and Cronbach's (1996) studies are useful, they are limited by the use of the Terman's data. First, there are the regular cohort effects that limit generalizability of any longitudinal study, but which become more noticeable and

Download English Version:

<https://daneshyari.com/en/article/4939745>

Download Persian Version:

<https://daneshyari.com/article/4939745>

[Daneshyari.com](https://daneshyari.com)