

assumptions that derive from “Eurocentric liberal political thought” (p. 139) and that “can serve to justify or reproduce the injustices of historical domination, particularly colonial imposition of values, and forced integration into oppressive economic, epistemic, and political systems” (p. 142). Miller’s central criticism is that the capability approach is too individualistic. He advocates a vaguely defined concept of “collective capability” that allows properties that are embedded in “group rituals, habits, customs, histories, stories, taboos, festivals and so on” (pp. 147–48) to have a value that is irreducible to values held by individuals.

In its origins, the capability approach was an attempt to broaden the informational base of welfare economics; its foundations were individualistic because economics is an individualistic discipline. The idea that the approach needs new foundations is a sign that the center of gravity of research on capability is drifting away from economics.

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Information, Incentives, and Education Policy.

By Derek A. Neal. The Sanford J. Grossman Lectures in Economics Series. Cambridge and London: Harvard University Press, 2018. Pp. xiii, 224. \$39.95. ISBN 978–0–674–05090–7, cloth. *JEL* 2018–0987

Recent decades have witnessed an outpouring of high-quality research on education. Much of this work is empirical, providing valuable findings on a host of topics. From this research, we have learned that the education landscape is littered with interventions that ought to work but don’t, while interventions that do work deliver much less than promised. What has been largely lacking is a unified, accessible treatment of the role that incentives and information play in giving rise to the outcomes we observe. The noted

psychologist Kurt Lewin famously said, “There is nothing so practical as a good theory.” This is admirably affirmed by Derek Neal’s application of economic modeling to frame empirical findings in education research and to draw out the implications for education policies. The book is targeted at advanced undergraduates and graduate students, but most education researchers will find, as I have, that they can learn a great deal from the book.

Neal lays out the reasons that government funding of education is needed; absent public funding, many parents would not have the wherewithal to pay for their children’s education, and some who have the wherewithal might choose not to provide appropriate education. Neal goes on to say “...knowing that we can justify government funding for education is not the same as knowing how government should purchase education services” (2018, p. 26). The book then lays out the ways that government can purchase education and their attendant merits and shortcomings. The following criterion for efficiency guides the analysis: a school system is inefficient if it can provide more learning output with the funds it receives or the same learning output with less funds. Learning output is defined as the value of the skills students obtain from their schooling. A production function for human capital is introduced, with current-period human capital of a student produced from previously acquired human capital, instructional resources provided both in and out of school, student characteristics and effort, and unobserved experiences of individual students that impact learning. Neal then shows how linking human capital to educational achievement produces a value-added model of achievement. In the context of this model, Neal demonstrates for students reading the book the practical relevance of conditions for unbiased estimation that they were taught in econometrics, the challenges in satisfying those conditions in education research, the approaches that have been developed, and key findings.

Turning to findings, Neal begins with evidence regarding poor uses of funds. He highlights four practices widely used in public school systems:

- (i) increasing the salary of public school teachers who obtain master’s degrees despite

extensive evidence that such degrees do not improve teaching;

- (ii) failure to pay teachers differently based on either subject matter or grade levels they teach;
- (iii) granting tenure after a short period of time before adequate evidence of teaching capability has been established; and
- (iv) tying salaries to experience beyond the period of time over which teaching improves with experience.

In critiquing these practices, Neal provides careful and thoughtful assessments. For example, regarding the practice of tying salary to experience he says, “The fact that teacher salaries in public schools apparently continue rising with experience long after teacher productivity stops rising with experience is not *prima facie* evidence that public schools are wasting resources. A large literature in personnel economics demonstrates that firms may back-load compensation to encourage workers not to shirk” (2018, p. 45). His point here is that older workers who shirk risk being fired, thereby losing compensation and potentially a portion of their pension benefits. He then goes on to argue that such considerations do not apply for many public school teachers because they “...work under contracts that offer extraordinary levels of employment protection and mandate few consequential performance reviews. In this setting, the pay scales that back-load teacher compensation may do little to solve agency problems between teachers and schools” (2018, p. 45).

The agency problems alluded to in the previous paragraph are laid out with admirable clarity in chapter 2, which is titled “Assessment Based Incentives.” This chapter and associated appendices will be challenging to students but rewarding to those who see them through. A clear definition is provided: “An assessment-based incentive (ABI) system is a set of rules that creates a mapping between the test scores of particular sets of students and the rewards or punishments that the educators responsible for educating these sets of students receive” (2018, p. 64). Relevance is driven home by the observation that “the No Child Left Behind Act (NCLB) of 2001 authorized the largest-scale ABI system in history” (2018, p. 64). Neal goes on to say “...proponents of ABI systems

argue that, by linking rewards and punishments for educators to objective performance measures derived from student achievement results, it is possible to reward excellent educators and remove weak ones without creating opportunities for their supervisors to make distinctions among them based on nepotism or favoritism” (2018, p. 63). The chapter then turns to an evaluation of what these systems have and have not accomplished and recommendations for improving the design of such systems. A straightforward but rigorous presentation of lessons learned from modern agency theory is presented. This presentation clearly delineates the challenges and (often unintended) consequences of tying incentives to measures of performance. A veritable clinic on assessment-based incentives follows, including the case for the pay-for-percentile (PFP) approach that Neal and his coauthors advocate. Some recommendations will startle, and provide grist for lively debate. For example, Neal says, “Abandon standards. Education authorities must not link performance statistics for educators to learning standards for students” (2018, p. 77). He recognizes that this will seem perverse to many policy makers and education researchers. He goes on to argue that linking accountability measures to learning standards runs counter to an important design principle. “Explicit incentive systems should be built around performance metrics that are easy to verify and therefore hard to corrupt. However, measures of student subject mastery relative to learning standards are hard to verify and therefore easy to corrupt” (2018, p. 77). PFP, which does not employ standards, is proposed as a less easily manipulated alternative. It bears noting, however, that implementation of PFP requires educational administrators to find appropriate comparison classrooms, a substantial undertaking that requires diligent and evenhanded administrators. Hence, while it reduces scope for manipulation relative to standards, PFP is not entirely immune to manipulation. But a key message of chapter 2 is that there is no perfect metric; rather, there are important criteria, among which verifiability ranks highly, for choosing among imperfect alternatives. Will PFP fare better than standards? The book makes a strong case for putting it into practice to find out.

The chapters that follow explain and evaluate systems that rely on parental choice, including choice among traditional public schools via choice of residence, centralized assignment mechanisms, charter schools, and educational vouchers. These chapters too are rigorous and insightful and summarized as follows: “Much work remains, but one thing is clear. Policy makers should not treat programs that expand parental choice as substitutes for accountability systems. Policy makers must combine efforts to promote competition among schools with well-designed accountability systems” (2018, p. 177). Neal argues for engaging parents as “performance monitors” because parents have knowledge of school performance that goes beyond results of achievement tests. He also sees important synergies between accountability systems and parental monitoring, with the information produced by the former enhancing the effectiveness of the latter.

The writing style is engaging. Neal literally speaks to readers: “I wrote the lectures as conversations with my students. Thus, ‘we’ refers to my students and me, while ‘you’ refers to the students who are reading these lectures in preparation for my class. My hope is that, over time, ‘you’ will encompass students taking classes in undergraduate programs, professional schools, and PhD programs around the world” (2018, p. xi). I share this hope.

Of course, as noted above, readers will likely find points to debate. Being no stranger to lively debate, Neal would, no doubt, view that as a mark of success of the book. Neal tells us that the work for this book was undertaken during the five-year period that he held the Grossman Prize Lectureship at the University of Chicago, an award to promote teaching of research findings to undergraduates. One can only wish that all education funds were spent as well!

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Research Universities and the Public Good: Discovery for an Uncertain Future. By Jason Owen-Smith. Innovation and Technology in the World Economy series. Stanford: Stanford University Press, Stanford Business Books,

2018. Pp. xiii, 213. \$35.00, cloth. ISBN 978-1-5036-0194-9, cloth; 978-1-5036-0709-5, e-book. *JEL* 2019-0126

This book is a timely reinforcement of the importance of research universities based on the public value they generate. The context is the United States, home to a world-leading research base, and the focus is on the 3 percent of higher education institutions where nearly 90 percent of all research and development (R&D) is carried out. In recent years, such institutions have seen declining state investment together with real-terms declines in federal funding. This has been accompanied by a political discourse that has been increasingly skeptical toward hard-to-measure outcomes, and focused on private returns to higher education or specific research projects.

Such trends, the author argues, threaten to untangle and damage the complex, interrelated features of research universities that have been crucial for their success as sources of new knowledge, anchors for regional and national communities, and hubs that connect disparate parts of society. Chapter 1 gives an overview of these metaphors, and the well-known story of Stanford University, Page Rank, and Google is retold, highlighting how a series of seemingly unrelated investments in different topics over many years culminated in Google as we know it today. This is a key example of how research universities are able to create opportunities and address challenges that we cannot yet anticipate.

Chapter 2 presents an overview of the organization of research universities. Following a brief but illuminating history of the post-World War II era—during which the US government undertook a large-scale expansion of the university sector—the author claims that the research universities we see today are a result of piecemeal, iterative processes set by policy debates that could have gone otherwise: “The U.S. research university that we know today is a beautiful accident” (Owen-Smith 2018, p. 34).

The author then develops the source, anchor, hub metaphors in more depth. In chapter 3, the importance of on-campus networks is highlighted in a description of research universities as sources of discovery. The prior knowledge and skills of people working there are likened to a set