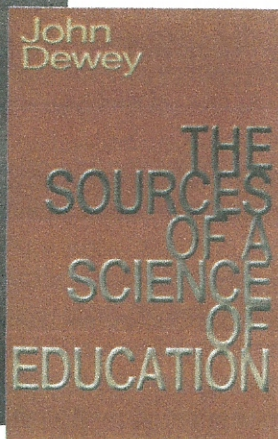


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THE LOST SOURCES OF A SCIENCE OF EDUCATION

by Daniel Tanner



Abstract

*The author explores the mystery of how and why John Dewey's *The Sources of a Science of Education* came to be lost or forgotten, and why that work is still so important today.*

Key words: Dewey, education, science

Over the years of my career, one of my most treasured books in my personal library is John Dewey's (1929) *The Sources of a Science of Education*. One day back in 2012, I was unable to find my copy when I had need for it. In seeking a replacement, I found that the book had gone out of print. This surprised me because the work was the inaugural lecture, presented in 1929, for the historic lecture series that continued through 1974 under the auspices of Kappa Delta Pi. On the 10th anniversary of Dewey's inaugural lecture, he presented his second and final lecture, *Experience and Education* (1938). To my mind, both lectures were educational classics, but I was puzzled and distressed by the realization that *The Sources of a Science of Education*, so well received at the time of its publication, came to be massively forgotten, ignored, or neglected over the years despite its profound, powerful,

and prophetic message for the scientific structure and function of educational and social research.

Having just established a foundation for the advancement of public education, I proceeded to obtain clearance from Kappa Delta Pi for my foundation to publish the text of Dewey's *The Sources of a Science of Education*. In the new edition, published in 2013, I added an introduction, along with a selection of excerpts from Dewey's last published words before his passing in 1952 (Clapp, 1952, pp. viii–ix). Ironically and prophetically, Dewey's last words addressed the role of the teacher and the function of the public school system in the creation of a democratic society. But here Dewey warned that the organized attacks on the public schools, increasingly extreme and virulent, are likely to continue and must be expected as long as the educational system is part of the common life in which repressive and reactionary forces prevail in other institutions of the wider society.

The Sources: Educational Problems and Practices

Upon publication of the new edition of *The Sources of a Science of Education* (Dewey, 2013), I presented complimentary copies to attendees at national meetings of scholarly organizations during which I made comments on the significance

of the work. I suggested that Dewey's message was loud and clear: The sources of a science of education must be determined by educational *problems*, with educational *practices* providing the data for inquiry and solution. The social sciences may be drawn upon as tools, but should not determine the sources. In Dewey's (2013) words, "the contributions that might come from classroom teachers are a comparatively neglected field; or, to change the metaphor, an almost unworked mine" (p. 46).

Turning Democratic Educational Aims to Nationalizing Aims

Over the last several years, I realized that I had never fully examined the mystery of how and why Dewey's sources for creating a science of education had become lost. As fate would have it, one day in May 2017, I received an overseas telephone call from a book publisher in France, followed by a letter requesting permission to publish a French-language translation of my 2013 edition of *The Sources of a Science of Education*. The letter also requested that I write the Preface for the French edition.

The French publishing house (appropriately named *Editions Raison et Passions*) specialized in works in education and psychology, and also published the scientific journal *Travail et Apprentissages* ("Work and Learning"). The publisher explained that Dewey's book had never been translated into French and that a translation of the work would make it accessible to a wider scholarly and scientific audience. By a remarkable coincidence, the major school grants awarded by my foundation were then and continue to be devoted to bringing hands-on learning back into the curriculum through laboratory, shop, and community experience.

The Preface for the French edition, presented at the close of this article, would provide me with the opportunity to address the mystery of how and why Dewey's *The Sources of a Science of Education* came to be lost, forgotten, or neglected. The answer to the mystery is found in the nature

and direction taken by educational research in the social sciences since mid-20th century, coupled with the nationalizing influences on education which, in turn, detoured educational aims or objectives away from the democratic educational function and toward nationalistic political ends promoted by government and big business. The making of the curriculum was taken away from the teacher and turned over to external high-stakes testing, which provided tangible measures of educational production and efficiency. For the first time in modern American history, the nationalizing position on the aims and functions of public education, combined with the "remedy" of high-stakes testing, was virtually identical for both major political parties.

Discipline-Centered Educational Research

Also around mid-20th century, educational research was becoming increasingly specialized within each segmental academic discipline of the social sciences. The nation's political leadership seemed to have forgotten that the student is also a citizen, and the worth of the citizen in American democracy is determined by the powers of an enlightened and shared social consciousness. Further, educational problems, such as life problems, cannot be solved within any single disciplinary boundary of academic social science.

As with education, the science of medicine, for example, cannot be confined to the boundaries of any single academic discipline. The science of medicine did not truly emerge until the opening of the 20th century when researchers began making concrete attacks on the problems of medical practice by means of scientific method. Even as late as the opening of the 20th century, medical practice was focused largely on the relief of symptoms rather than on the causes and prevention of disease (*Merck's 1899 Manual*).

Education reforms undertaken during the contemporary era have been largely a response to a perceived decline in the nation's global economic hegemony. The decline was not at-



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tributed to the drain of engagement in endless wars nor to the educational problems of children in poverty, but to the alleged shortcomings of American public schools as measured by external tests in comparison to other nations. In fact, when demographic corrections were made in comparing the results for the inclusive American school system against the selective systems of other nations, the American students more than held their own (Carson, Huelskamp, & Woodall, 1993).

Education Reform as a "Quick Fix"

The penchant for "quick fixes" is one of the cultural characteristics endemic to American political leaders. And so it happened that President Lyndon Johnson's War on Poverty, launched in early 1964, was met immediately by the publication of the book *Stability and Change in Human Characteristics* by Benjamin S. Bloom (1964), an educational psychologist at the University of Chicago. The author's qualified principal finding was that 50% of human intelligence is developed by age 4 (Bloom, 1964, p. 88). The "quick fix" was to concentrate federal funding for education on where it would count most—namely, on early childhood through the earliest elementary grades.

Mostly overlooked was the fact that the research findings were based on narrow psychometric measures dating back to the 1920s. Since that time, human intelligence and its development have been found to be far more complex, extending through most of the life span. Nevertheless, Bloom's (1964) book was seized upon by the national media and the political leadership to the extent that the initiatives for equal educational opportunity in the War on Poverty were directed mainly at preschool education; the media had called into question whether kindergarten was too late. All that would be required to bridge the nagging achievement gap between children in poverty and more advantaged children would be to

focus educational reforms on the earliest years of childhood. The consequence was devastating to the adolescent population as federal and state funding in the War on Poverty was directed at the earliest years of life to the neglect of older children and youth.

Also overlooked by political and educational leaders was Bloom's (1964) caveat that "These results make it clear that a single measure of general intelligence cannot be the basis for a long-term decision about an individual" (p. 88), and that

It is also likely that the greatest changes may take place in the individual when he enters a new level of school environment, that is, high school or college, if the environment is different from the previous one and if it is a powerful and consistent learning environment. (p. 128)

Further, intelligence as measured by scores on psychometric tests does not correlate highly with life success nor even future academic success.

The Forgotten Adolescent

Adolescence marks the period of the development of the highest powers of intelligence—namely the ability to solve problems by means of hypothetical thinking, or what Dewey (1916, 1933) termed "the method of intelligence." But this development requires a classroom and school environment that provides concerted opportunities for systematic engagement in the formulation and testing of ideas as hypotheses for problem solutions. The prefabricated answers to items on high-stakes tests would appear to mitigate such learning.

To this day, the support for early childhood education as public policy has been given priority over adolescent education even though the science of education tells us that human development does not end in early childhood. Society risks great loss when the benefits of education at an early age are not sustained and

developed like an upward and widening spiral throughout the school years, into adulthood, and extending through the life span.

Bias in Social Research

In such factors as design, conduct, interpretation, and application of social and educational research, there is a tendency to assume that the research is objective when, in fact, these factors are governed or determined by valuations that typically are not identified by the researcher. Gunnar Myrdal, one of the greatest social scientists of the 20th century and author of the classic study *An American Dilemma* (1944), recounted how his research experiences led him to

a growing disrespect for the traditionally rigid boundary lines between separate disciplines of social science. . . . The rationale for this disrespect was my growing recognition of the fact that *in reality there are not economic, sociological, or psychological problems, but simply problems, and that as a rule they are complex.* (Myrdal, 1969, p. 10, original emphasis)

Myrdal's position perfectly fits the problems of education and the curriculum, which cannot be confined to any singular academic discipline of the social sciences. Myrdal (1969) went on to criticize researchers in the social sciences for employing elaborate algebraic formulas and terminology in an attempt to objectify what cannot be objectified (p. 59) "to the extent of impairing their ability to understand one another—and perhaps occasionally even themselves" (p. 42).

Further, in addition to hidden valuations, social science research often carries many disparate variables and false dualisms on such issues as selective vs. inclusive school systems, theory vs. practice, academic vs. nonacademic sides of the curriculum, subject matter vs. methods, homogeneous vs. heterogeneous pupil grouping, desegregation vs. integration, cooperation vs. competition, thinking vs. doing, heredity vs. environment, ends vs. means, pure vs. ap-

plied knowledge, and so on (Dewey, 1916). To set one needed aim or practice at the expense of another equally needed aim or practice is to set education against itself—a false dualism that only impedes progress.

In conclusion, Dewey's *The Sources of a Science of Education* is even more relevant to the science of educational research today than it was when the address was first delivered as a lecture and published nearly 90 years ago.

Preface to the French-Language 2018 Edition

There is a great mystery surrounding *The Sources of a Science of Education*. Why did this classic work come to be so massively neglected, misunderstood, and virtually forgotten since the time of publication? The answer can be found in the path taken by educational research after mid-20th century.

In *The Sources of a Science of Education*, John Dewey maintained that while the social sciences may be drawn upon as tools in solving educational problems, educational *practices* are the source of the ultimate problems to be investigated. This obviously places the teacher in a critical role for problem identification, solution, and educational improvement. And this requires that the teacher's role is that of a professional, not an employee.

However, since mid-20th century, powerful nationalizing influences have come to be imposed upon American education in the shaping of educational policy and practice to the extent that the work of the teacher became increasingly controlled and directed by regulative and interventional measures largely external to the problems of educational practice. Educational research became a growth industry through federal funding and state mandates. The identification of educational problems came to be defined and allocated through the self-serving, specialized, puristic, and segmental disciplines of the social sciences in the departmentalized university—where jurisdictional lines are zealously

established and jealously protected, and where perhaps too much is made of puristic knowledge over applied knowledge. As John Dewey (1939) commented in other writings, “Those who would protect the ‘purity’ of science would need, like traditional feminine chastity, all kinds of safeguards to hedge it about” (p. 152).

Educational problems, like life problems, cannot be confined to the boundaries of single academic disciplines, not to mention the situation in which each academic discipline is plagued by conflicting schools of thought or even warring sects, whether within economics or psychology, sociology or political science, philosophy or history. At the same time, the puristic and segmental academic disciplines of the university have been imposed upon the school curriculum, leading to the neglect of the democratic socio-civic function of education and the decline of experiential learning through which the teacher and students are engaged in cooperation, collaboration, and consultation.

To further complicate matters, powerful sociopolitical pressures from the business sector have been imposed to restructure American public schools along the lines of business. Productivity and the worth of the student, the teacher, and the school are measured by scores on external, standardized tests composed of prefabricated answers. The psychometricians have come to control the school curriculum. The nation that gave the world the first public school system—unitary, universal, inclusive, and comprehensive in structure and function—is in danger of reverting to a dual system with publicly funded charter schools under private management.

Today, leading research journals in education devote entire issues to featuring incriminating themes of needed educational “reform” and “intervention,” opportunistically holding the teacher and the school at fault for whatever deficiencies may be alleged by the school blamers. Not uncommonly, when educational researchers are unable to find what they are looking for, they conclude that it’s not there. Or if they cannot

find what’s there, they can find what’s not there.

Educators have surrendered the education cause by allowing educational aims to be determined socio-politically outside the education function. Attacks on the teacher and the public schools are hardly a new phenomenon. It is revealing that John Dewey’s last published statement, presented at the close of this volume, addressed the problem of unwarranted attacks on the public schools.

Lester Frank Ward (1883), the father of American social science, who was to have a profound influence on John Dewey’s thought, declared in 1883 that “Education can not be successfully conducted on the competitive system. It is an enterprise so wholly dissimilar from those of ordinary business life that an entirely different set of principles must be applied to it throughout” (p. 584). To Ward (1883), “Education is essentially a scientific labor, and this in the highest sense. It is not only the science of sciences but the art of arts” (p. 584). To John Dewey (2013), education is “an art that progressively incorporates more and more science into itself” (p. 13).

No calling would be more nobly conceived than that expressed in the words of Lester Frank Ward and John Dewey. But John Dewey’s *The Sources of a Science of Education* awaits rediscovery, and remains to be acted upon. 📖

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