

A Familiar Mingling

Learning Together. A History of Coeducation in American Schools. DAVID TYACK and ELISABETH HANSOT. Yale University Press, New Haven, CT, and Russell Sage Foundation, New York, 1990. xii, 369 pp., illus. \$29.95.

The title of this work reminds us with a jolt that coeducation is, in fact, a fundamental *policy* of American public education. Representing a feature in American classrooms so ordinary as to be virtually invisible, “coeducation” is the one word that has not been on the lips of policy-makers and educational advocates in the current national debate on school reform.

Learning Together attends to this silence. David Tyack and Elisabeth Hansot have written an illuminating and comprehensive history of schools examined through the “lens” of gender. This vantage not only reveals the gender politics and practices that helped to shape our nation’s schools but also leads the authors to question standard interpretations of certain educational policies and reforms over the past two centuries. The impact of vocationalism, for instance, is less monolithic, they find, when observed through the prism of coeducation. The growth of athletic programs early in this century appears to have been a direct response to fears of feminization (and its presumed assault on the virility of American men). Race, social class, locality, religion, and national origin historically have affected boys and girls differently—a phenomenon that continues today. The authors show, then, that any analysis of contemporary programs, like the interpretation of historical data, must take family and cultural beliefs about gender as well as the opportunity structure of a gender-differentiated economy into account. Contemporary observers and educational leaders, therefore, as well as scholars and students of history, should find this history compelling and germane.

Tracing coeducation and gender ideology to their roots in the colonial church and family, Tyack and Hansot document the somewhat haphazard and decentralized development of coeducational public schools over the subsequent 300 years. They study rural schools, urban schools, basic grammar education, and the development of the modern high school. Again seeking to decipher

unspoken assumptions about gender, they scrutinize the relative lack of controversy in America over coeducation early in the 19th century—a time when foreign observers found it “alarming.” How could Americans have subscribed, Tyack and Hansot ask, to increasingly rigid and distinct economic and social spheres for men and women and at the same time have favored mixing boys and girls in the public school classroom? Conversely, why did opponents of coeducation become more vocal and their arguments capture public attention during the late 19th and early 20th centuries, long after the practice had become established? Where and why did single-sex education persist? And why were the gender biases in so-called “identical coeducation” unseen and unstudied by educators prior to our current generation?

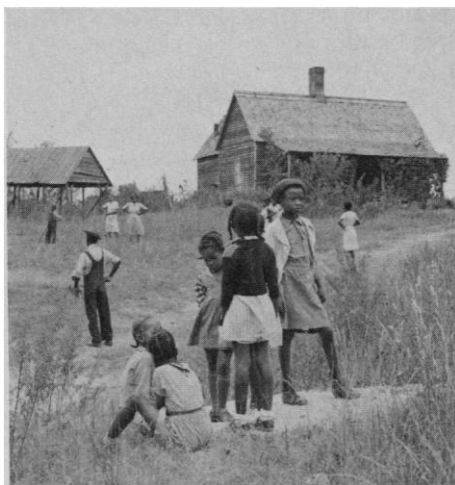
Learning Together presents a rich and exhaustive search through this “tangled histo-

ry” of gender and education that links both the silences and the debates surrounding coeducation to the changing roles of women and men in our society. Coeducation became controversial, explain Tyack and Hansot, as a result of women’s moving into nontraditional roles in the public sphere that prior to the Progressive Era had been the exclusive domain of men. The “woman question” had existed throughout history, but it took on a new urgency in an era of rapid social and economic change. Similarly, Progressive Era school reforms aimed at addressing presumed differences among children from various racial, ethnic, and social class backgrounds aroused substantial debate. The discussion about women, however, was distinctive. “Whereas Americans were reluctant to talk about class differences, especially in education,” write Tyack and Hansot, “they freely discussed gender distinctions.” It was taken for granted, they explain, “that the sex of children not only would but should shape their opportunities in life.”

In spite of this history of gender differentiation and discrimination, however, Tyack and Hansot maintain throughout the book that coeducational public schools provided a relatively benevolent environment in which girls were able to gain approval for academic achievements and to experience public suc-



“In Greenbelt, Maryland, in 1939, young girls and boys cooperate in a sewing project. In later grades, manual activities, like physical education, were typically sex-segregated.” [From *Learning Together*; Arthur Rothstein, FSA, Library of Congress]



"Recess at the black Veysey school in Greene County, Georgia, 1941." This photograph "indicate[s] the same pattern of voluntary gender segregation on school playgrounds fifty years ago that researchers document today." [From *Learning Together*; Jack Delano, FSA, Library of Congress]

cess. This is not to suggest, they warn, that schools are or ever have been benign places. Like many other historians whose work they discuss, Tyack and Hansot maintain that American education has never achieved the democratic ideal of serving the needs of all children equally. In practice, they write, the public schools of the 19th century "tended to reflect the values and interests of the white, Anglo-Saxon, Protestant, middle-class males who, by and large, founded and ran them."

But for girls, Tyack and Hansot argue, schools imposed fewer restrictions and provided greater opportunity than society at large. Some critics are sure to challenge Tyack and Hansot on the relativity of their argument. No other institution, they maintain, was as free of gender-specific policies and expectations as public education. They point to the lack of explicit policies that distinguished between boys and girls and give great credence to the relative absence of gender discrimination in the central academic work of the schools. Differentiation occurred only at the periphery, the authors argue, in areas such as vocational education and athletics. It is no surprise, therefore, that these were the first areas of school life to be challenged by sex equity advocates and tested in the courts under Title IX of the 1972 Educational Amendments to the Civil Rights Act of 1964.

It is the generosity and capaciousness of Tyack and Hansot's scholarship that make *Learning Together* so important a book. It pays tribute to a vast amount of research by other historians in the fields of women's history and the history of American educa-

tion and at the same time incorporates understandings derived from organizational and policy studies. Tyack and Hansot understand that debates about gender policy in the schools have served as a proxy for Americans' attempts to reformulate gender relations in the larger society. And their contribution to this effort is informed by diligence and breadth.

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Nuclear Reactions

Heavy Ion Reactions. Lecture Notes. Vol. 1, The Elementary Processes. Part 1, Elastic and Inelastic Reactions; Part 2, Transfer Reactions. RICARDO A. BROGLIA and AAGE WINTER. Addison-Wesley, Redwood City, CA, 1990. xx, 504 pp., illus. \$49.50. *Frontiers in Physics*, 84.

Until about two decades ago, the study of nuclear scattering and reactions was dominated by the use of light-ion projectiles (the nuclei of the atoms of helium and lighter particles, namely neutrons, protons, deuterons, tritons, helions, and alpha particles). Then came the advent of "heavy-ion physics" with the widespread availability of accelerated beams of heavier ions. This led to a dramatic explosion in the number and variety of nuclear reactions that could be studied. Essentially any stable nucleus could be used to bombard any other stable nucleus. Currently, even secondary beams of radioactive nuclei initiated by a primary nuclear reaction are being used, and this particular field promises to expand in the near future. The range of bombarding energies has also expanded enormously, now covering energies from close to zero up to 200 GeV per nucleon.

In view of the broad interest in this field, which engages the activities of a considerable fraction of the nuclear physics community, there is something of a dearth of books on the subject. There is, of course, the multivolume *Treatise on Heavy-Ion Science*, edited by D. Allan Bromley, and the subject is touched upon briefly in a number of other texts. We also have the nice introductory book of 1980, *Nuclear Reactions with Heavy Ions* by Reiner Bass. It is not feasible for a single volume to cover in depth all the subjects subsumed under the title *Heavy Ion Reactions*, and that is true also for the present volume. The best we can hope for is a careful treatment of some aspect, and that criterion is certainly met by this work.

There is no well-defined borderline be-

tween light- and heavy-ion physics; indeed, I regard alpha particles as prototypical "heavy ions" because reactions with them often display features that are characteristic of much heavier projectiles, and concepts derived from their study have found immediate application to reactions induced by the heavier ions. However, two characteristics are usually associated with heavy-ion collisions: the strong repulsive Coulomb field due to the large charges carried by the projectile and target nuclei, and the large momentum and angular momentum carried by their relative motion because of their large masses. Frequently these two features mean that the quantum uncertainties associated with the positions of the nuclei are reduced sufficiently that it becomes a reasonable approximation to think of their centers of mass as localized to motion along a classical trajectory, primarily that of a Rutherford orbit. Wave-mechanical corrections to this picture can be made using the Wentzel-Kramers-Brillouin (WKB) approximation. The internal motions of each nucleus remain strongly quantal, however, and must be treated by the laws of quantum mechanics. This hybrid approach, called "semiclassical," has been very successful when applied to both atomic and heavy-ion collisions and can provide considerably more insight (most of us being classical creatures) into the physical processes being studied than the more detailed (and more difficult) fully quantal calculations.

This semiclassical approach is also the subject of volume 1 of *Heavy Ion Reactions*. Aage Winther has devoted much of his professional career to the development and application of these semiclassical techniques, and Ricardo Broglia has been associated with much of their use in elucidating heavy-ion collision phenomena. Consequently we could hope for an authoritative treatment from these authors, and that we have. This first volume consists of two parts. Part 1 was originally published 10 years ago, under the same title, by Benjamin Cummings and is reproduced here with only minor corrections. It deals with elastic and inelastic scattering, including Coulomb excitation with which Winther has been associated for four decades, and has become established as a standard reference in its field. The present reviewer has found it invaluable source material. It is devoted primarily to the description of collisions at bombarding energies less than 10 MeV per nucleon. Nowadays these are regarded as "low energies," as accelerators capable of accelerating beams to higher energies, up to about 100 MeV per nucleon, have become available. Although this "low energy" emphasis could be regarded as something of a limitation, much of