

Training Children, Imagining Industrial Adulthoods

By Nina Lerman

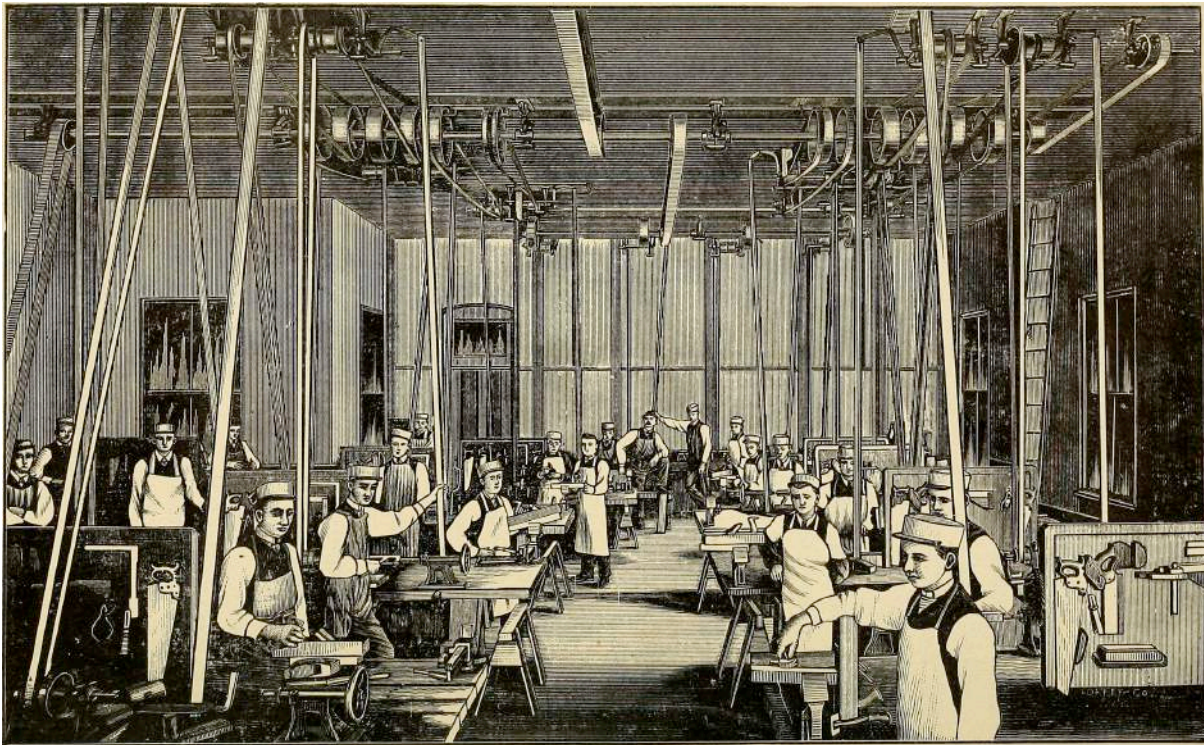


FIG. 8. THE WOOD-WORKING SHOP.

Figure 1: *School workshops at the turn of the 20th Century: machine woodworking for prospective engineers at the Manual Training High School* (Woodward, Calvin Milton. *The Manual Training School, Comprising a Full Statement of Its Aims, Methods, and Results with Figured Drawings of Shop Exercises in Woods and Metals*. Boston: D. C. Heath & co., 1906. p. 39).

What had happened to “Yankee ingenuity”? Professors in the newly professionalizing engineering schools of the late nineteenth century US lamented the disappearance of a figure they called “the Yankee whittling boy” amidst the vast urban industrial growth of several decades. The mind was being trained in the urban setting, they thought, but the eye and the hand were left behind. They devised a new high school curriculum, publicized as “Manual Training” and intended for future engineers and draftsmen: algebra and physics, French and shop training—in wood and metal, by hand and by machine, boys would master both the theory and the practice of technology in preparation for adult expertise.

But the term “manual training” was versatile, and the engineers’ pedagogical work meshed with a growing trend in educational theory overall: children should learn by experience, building on connections with things they knew, deriving theory from example. Manual training could also apply to younger children, to girls, to students never expected to enter the halls of university. By the 1890s, manual training might require a classroom full of steam-powered woodworking machinery, even machine tools (fig 1)—or it might only require a set of cards with holes punched in them, so very small children could work on threading yarn through the cardboard (fig 2).

Or, in between, it might include instruction in the use of hand tools, where each child made an exact copy of the model prescribed by the teacher (fig 3), work which would instill “habits of accuracy, neatness, dispatch, and obedience” as well as training the mind, the eye, and the hand together.



Figures 2 and 3: Manual training approaches at the turn of the 20th Century: card sewing and “Sloyd” woodworking at the Elementary Manual Training School (Custis, John Trevor. *The Public Schools of Philadelphia: Historical, Biographical, Statistical*. Philadelphia: Burk & McFetridge Co., 1897. p. 195 + p. 199 <http://archive.org/details/publicschoolsofp00custrich>).

Disentangling these multiple meanings of “manual training” requires attention to the technological knowledge content expected in each setting, rather than repeating the overlapping terminologies of school reports and teachers’ manuals. High school boys designed machines, created working drawings, tested theories, and built a working model. Boys in elementary manual training copied the teacher and followed rules; they were not, for the most part, educated in preparation for high school (manual training or otherwise). They were, instead, predicted to be the children—most of them from immigrant and working class households—who would leave school for work at age 14, so high school preparation was beyond the “experience” and needs of the child.

While in many ways we may find such sorting of children unsurprising in retrospect, the apparently natural mappings of children onto ways of knowing about the material world was actually the product of a century of debates, negotiations, experiments, and improvisations. Some of these results, indeed, might have surprised the adults of a generation or two earlier, whether the philanthropists of the 1820s, who could not have imagined girls using manual training woodworking tools, or the reformers of the same era seeking more democratic access to knowledge for citizens of the young republic, or the new middle-class parents of mid-century, who made sure their sons worked in white shirt collars and not greasy artisanal aprons. Over the course of the century, in apprenticeships and schoolrooms, technical institutes and workshops and courtrooms, we can see many small forms of planning and judgement: who valued what knowledge, under what circumstances? Which kinds of knowledge seemed valuable, for whom and to whom? How did people understand their often-changing relationships with material things? Making technical education work meant envisioning the city of children's futures: its technologies, its political order; its economic functions. And planning this future city meant, in turn, looking at children, envisioning them as adults.

Thinking about "industrialization" as long-term historical change often brings to our minds processes of rationalization and efficiency, but this large transformation, bundled so neatly into a single word, was made of many smaller decisions—by people with more and less power, weighing a range of values, making plans for today, next year, their lives, their children's lives. The "histories of planning" constituting the fabric of industrial capitalism in a nineteenth-century manufacturing centre are the histories of many small plans, many small decisions, many small processes of knowing how: a city full of people engaged in "making things work."