EVENING SCHOOLS AND CHILD LABOR IN THE UNITED STATES, 1870-1910

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CHAPTER I

INTRODUCTION

During the nineteenth century, industrialization and urbanization in the United States expanded opportunities for children to work for pay outside of the home. In addition to the opportunity cost of forgoing work, families sending children to school often absorbed pecuniary costs for tuition, books, transportation, and other fees.[1] Despite the rapid expansion of public "common schools" and claims of high private and social returns to schooling (e.g., see Dexter 1904; Cubberley 1919; Goldin 1999), the interaction of costs, benefits, and constraints continued to induce a high proportion of children, especially teenagers, to enter the labor market.[2] As late as 1880, approximately one-half of boys (ages 12 to 17) reported a primary occupation other than "attending school."[3] Only about one-third of these working boys reported attending school at any point in the previous year, and most of this attendance was extremely short-term.[4]

[1] New York, Connecticut and New Jersey, for example, did not abolish "rate bills until 1867, 1868, and 1871, although some cities within these states abandoned the practice of charging tuition much earlier (Cubberley 1919).

[2] Although poverty motivated many families to send their children to work, this was not the only reason youths failed to enroll in school or left prior to completing at least a primary school education. For example, survey evidence suggests that many working children preferred work to school, often viewing work as a path to independence and training for better employment opportunities, and parents frequently did not view school as a worthwhile use of their children's time (e.g., see New Jersey Inspector of Factories and Workshops 1883-1885; Cubberley 1919; Moehling 2005). Even among youths, who desired further education, girls and boys were often "found destitute of decent clothing to wear to school or unwilling to betray their deficiencies (caused by absences due to work or illness or simply slow learning ability) before pupils farther advanced, though younger, than themselves" (Stone 1849, 86).

[3] This figure is calculated using the 1880 census sample from the *Integrated Public Use Microdata Series* (IPUMS) (Ruggles et al. 2004). This may understate labor force participation since the census only asked about the activity in which individuals earned the most money or spent the most time. Consequently, enumerators likely missed many youths performing unpaid house (or farm) work or engaging in part-time work while attending school.

[4] The census asked about months of schooling only in 1900. In that year, only 4 percent of working youths attended school for 3 or more months in the preceding year and this was closer to 1 percent in urban areas (IPUMS). As discussed in Chapter IV, however, this appears to include only attendance in day schools.

Although children's work was considered a crucial part of their development in the past, in the emerging industrial economy children were no longer working and training alongside their parents. Increasingly, youths were employed working long hours in (what many considered to be) harsh conditions within factories, mills, and retail shops. Moreover, apprenticeships, which had traditionally provided opportunities for education and economic advancement for working children, were replaced by unskilled production positions in the new factory system.

In light of these trends, educators, clergy, philanthropists, women's interest groups, and politicians began to direct greater attention to the education of working children. In addition to concern over the perpetuation of ignorance and limited opportunities that the lack of education would cause for such children, much of the public discourse regarding children's work and schooling centered on perceived externalities to education (e.g., see Cubberley 1919; Ensign 1969). Specifically, influential education activists increasingly linked schooling to moral development, viewed education as an essential part of a viable democracy, and connected ignorance to criminal behavior.[5]

Despite heightened awareness and focus on the economic and social consequences thought to accompany inadequate education, there was little serious discussion of compulsory school attendance legislation during the first half of the nineteenth century. Only two states (Massachusetts, Vermont) and the District of Colombia had enacted compulsory attendance legislation prior to the 1870s, and these laws were extremely lenient and not well-enforced (Cubberley 1919; Ensign 1969; Landes and Solmon 1972). Strong manufacturing interests and families whose income depended heavily on children's earnings were unlikely to support such

[5] It was frequently claimed that educated citizens were more likely to vote and participate in other civic activities, more likely to be productive and docile workers, and less likely to engage in criminal activity (e.g., see U.S. Bureau of Education 1870; West 1968; Becker 1968; Field 1974; Gintis 1974; Cohn 1979). Consequently, some education activists argued that it was "a wiser economy to support schools than to feed prisons" (Stone 1849, 89).

legislation even if it had been proposed, and education activists were embroiled in the fight to establish a system of publicly-supported common schools (Cubberley 1919; Ensign 1969).[6] Moreover, in light of rapid urbanization and immigration, many urban schools were already overwhelmed with the task of providing accommodations for the students who voluntarily sought admission.[7]

Economists and historians have made considerable progress in understanding the expansion of public common schooling in the United States during the first half of the nineteenth century and the impact of legislation regarding child labor and compulsory school attendance in the late-nineteenth and early-twentieth century.[8] However, the quantitative literature has neither documented nor analyzed a coincident feature of the educational movement – widespread efforts to enable children to combine work *and* schooling. Non-traditional forms of education – including evening schools and employer-operated schools, as well as part-time, half-time, and continuation schools – emerged in response to the new industrial environment to facilitate the education of working children.[9]

Evening schools, in particular, were common throughout the U.S., and enrollment in these schools continued to increase throughout the later part of the nineteenth century. In 1900, 845 evening schools operated in 145 cities and towns, with a total enrollment of 203,000

[6] Teachers anticipated class disruptions by uninterested or ill-prepared students forced into the classroom as a result of compulsory schooling requirements.
[7] Overcrowding continued to pose challenges to the successful passage or enforcement of compulsory schooling legislation throughout the nineteenth century. In 1887, for example, a New York Superintendent wrote, "In most cities the accommodations are taxed to the utmost. Any effectual execution of the [compulsory school attendance] law would at once create the necessity for additional buildings in every city of the state" (Ensign 1969, 121).
[8] For example, see Cubberley (1919), Landes and Solmon (1972), Peterson (1985), Margo and Finegan (1996), Goldin and Katz (1999), Moehling (1999), and Lleras-Muney (2002).
[9] The terms "children" and "youths" are used interchangeably throughout the paper.

students (U.S. Bureau of Education 1900).[10] This represented a small fraction of total school enrollment at the national level, but the proportion was much higher in heavily industrial cities. In 1880, for example, in Holyoke, Lowell, and Salem, Massachusetts, evening school enrollment represented 15, 14, and 11 percent (respectively) of total public school enrollment. Evening schools accounted for 8 percent of enrollment in both New York City and Philadelphia, 12 percent of total enrollment in Newport, and 25 percent of enrollment in Paterson (U.S. Bureau of Education 1880).

To examine the diffusion and impact of evening schools, this dissertation brings together information from the Census, various *Annual Reports of the U.S. Commissioner of Education*, a number of states' school superintendent's reports and factory inspection reports, survey data on working youths in New Jersey, and a variety of secondary sources. I begin by piecing together a detailed history of the expansion and evolution of public evening schools, which emerged to facilitate education for working youths and to aid in the assimilation of immigrants' children (Chapter II). I then compile and econometrically examine a new dataset to assess the city-level determinants of evening school provision (Chapter III). The quantitative evidence is largely consistent with the historical narrative in Chapter II, indicating that cities with high proportions of working youths, sizable immigrant populations, and overcrowded day schools were most likely to establish evening schools. It is possible, however, that the observed positive correlation between child labor and evening school provision reflects an endogenous response of child labor to the availability of evening schools, or the presence of unobservable city-level factors that influenced both child labor and evening school provision. Therefore, after constructing a "simulated instrument" for child labor that exploits differences in industry structure that should

[10] These figures are conservative estimates since it was impossible at this time to tell how many public evening schools were in operation, except for cities of 8,000 inhabitants and over. Also, these figures do not include evening schools operated by private, religious, or philanthropic organizations.

have affected the prevalence of work among children but not the provision of evening schools, I estimate two-stage least squares (2SLS) and maximum likelihood models of evening school provision that allow for endogeneity in child labor. The results suggest that the naïve probit estimates overstate the causal relationship between child labor and evening school provision.

Chapter IV examines the impact of evening schools on literacy and school enrollment of youths throughout the U.S. Although contemporary critics argued that such schools would be ineffective due to the compressed instructional time and exhausted students, my analysis of large-scale, individual-level census data suggests that the schools did effectively promote school attendance and improve literacy outcomes. In accordance with the stated goals of the schools, the results indicate that the benefits of evening schools were concentrated among working children and the children of immigrants. The magnitude of the estimates suggest that if evening schools had been made available in all cities in the sample, the gap in literacy rates between native-born children (not reporting an occupation) and working youths or the children of immigrants would have been nearly eliminated. In this chapter, I also examine the possibility for evening schools to have unintended consequences of drawing day school students into the evening schools and into the labor market. The empirical evidence is consistent with this type of "crowding out" of day schools in some places, and it appears the ease of combining work and school may have induced some youths, especially native-born girls, to enter the labor force. Taken together, the findings in this chapter lend credibility to the claims of evening school proponents who argued that the schools improved educational access and were a better fit for working children and immigrants who could not maintain *regular* attendance at day schools.

Chapter V augments this account with an exploration of a unique survey of working children in New Jersey that includes information on the length and type of school attendance,

family background, and work activities. This case study suggests that youths facing fewer demands on their time in the evening, those working out of perceived necessity, and those working in industries that were well-monitored by factory inspectors were more likely to attend evening schools. The analysis also provides additional evidence that evening schools improved literacy and numeracy outcomes for working youths.

The final chapter discusses the historical significance of these findings and their relevance for present day evening schools in the U.S. and less developed countries. Evening schools effectively lowered the opportunity cost of education for children from poor families since they could attend school without forgoing wages. The schools also encountered less political opposition from (and often found advocates among) poor parents, some teachers, and manufacturers who were unwilling to support compulsory school attendance legislation or enforcement. As such, the schools provide an excellent example of the flexibility and adaptability of American educational institutions around the turn of the century. This is of particular interest since the relative openness of educational opportunities in the U.S. helped facilitate economic and social mobility during a time of rapid economic change and helped position the United States for economic leadership in the "Human Capital Century" (Goldin 1998, 2003).

In recent decades, when faced with the challenges of promoting school attendance of poor children, developing countries and urban school districts in the U.S. have also implemented non-traditional education programs that organize school schedules around children's work. For example, a recent World Bank report describes the expansion of "double shift" schools that help to solve problems of overcrowding in schools, lack of monetary resources to expand education infrastructure, and high dropout rates among working youths (Linden 2001). Flexible school

alternatives are increasingly being incorporated into urban school districts in the U.S. as part of comprehensive plans to improve high school retention and graduation rates (e.g., see Massachusetts Department of Education, 2006; Medina 2007). Like their nineteenth century counterparts, contemporary critics of these education alternatives voice concerns about the quality of instruction and potential for unintended consequences of the schools (e.g., see Rivarola and Fuller 1999; Bray 2000; Herran and Rodriquez 2000; Linden 2001). The results presented in this dissertation, however, suggest that evening schools may be an effective way to promote education, even in settings where compulsory schooling (or child labor) laws are found to be ineffective policy instruments or where overcrowded schools cannot accommodate growing population pressure.

CHAPTER II

THE ORIGIN AND EVOLUTION OF AMERICAN EVENING SCHOOLS

Comprehensive national statistics on American educational institutions, including evening schools, do not exist prior to the late-nineteenth century, but the history and character of the schools can be pieced together from a variety of primary and secondary sources. In this chapter, I use these sources to trace the development of evening instruction in the U.S. from the colonial era through World War I.

1. Fee-based Evening Schools in the Colonial Period

The concept of offering instruction in the evening originated long before the introduction of public evening schools. Dutch colonists operated the first evening schools in (what became) New York as early as 1661 (Seybolt 1925, 9). Schoolmasters rented a schoolhouse and could use the facility for evening, as well as day, classes, charging tuition based on the amount of time and level of instruction. Tuition generally exceeded that of the regular village school and the "schools were attended primarily by apprentices and boys less than twelve years of age who had not learned as much as was expected of them in day school" (Margulis 1927, 8).[11] Initially, schoolmasters operated evening schools primarily in the fall and winter months, from September or October through January. In 1751, as a result of the initiative of teachers, evening classes began to be held in the summer time, as well (Margulis 1927, 10). These summer sessions were attended mostly by girls, however, and some schools opened specifically "for young ladies only"

[11] Apprenticeship records of this period indicate that it was common to send apprentices to an evening school for their "winter schooling" as required by law (Seybolt 1925, 10).

(Seybolt 1925, 17). Although, most of the teaching centered on fundamentals: reading, writing, arithmetic, and spelling, fee-based evening schools that offered training in more advanced subjects and vocational preparation were also gaining popularity during the colonial era. The rise of free evening schools, in contrast, was concentrated in the nineteenth century.

2. Free Private Evening Schools

In the early 1800s, industrialization and rapid urbanization heightened public concern that many children worked during the day and therefore missed the educational opportunities afforded to other children (Cubberley 1919; Ensign 1969).[12] Religious organizations, philanthropic associations, and later public school officials responded by providing opportunities for evening instruction. In some places, such as Massachusetts, these free, privately-operated evening schools preceded public ones by several decades. As early as 1837, boys and girls in Boston could attend an evening school affiliated with a local chapel and "sustained by voluntary contributions of friends and the gratuitous services of teachers" (Stone 1849, 87).[13] Other examples include the Young Men's Christian Association, which actively established evening schools for children and young adults, and maintained evening schools in almost every large city by the end of the nineteenth century (Dexter 1904).

Factory owners and mill operators also established evening schools in or near places of employment to comply with existing labor laws and perhaps even to forestall the enactment of strict child labor and compulsory education legislation (U.S. Bureau of Education 1870-1914; New Jersey Factory Reports 1883-1885; Shaw 1884; Sewell 1904). For example, Connecticut

[12] As described in Chapter I, the concerns centered on the children's welfare, as well as perceived externalities to educating poor working children.

[13] In 1842, the volunteer efforts of Sunday school teachers culminated in the establishment of a successful evening school affiliated with the ministry at large in Providence as well (Stone 1849, 87).

passed a law in 1842 forbidding manufacturers to employ children under age 15 unless they had attended school for 3 out of the previous 12 months. Several factories promptly established night schools to satisfy this requirement for their young employees (Connecticut Board of Education 1866).[14]

Though only a handful of independently organized evening schools are discussed here, their importance should not be underestimated. Reports describing the successful operation of privately-operated evening schools – both in terms of enrollment numbers and the students' academic progress – helped later to persuade public educators to incorporate evening classes into their school systems (e.g., Stone 1849).

3. Free Public Evening Schools

New York and Kentucky established the first *public* evening schools during the 1830s.[15] Cities in Maryland, Rhode Island, Pennsylvania, Massachusetts, and Ohio followed shortly thereafter (Cubberley 1919; Stockwell 1876). In some cities (e.g., Boston), the public evening schools began to operate alongside, and eventually replaced, private evening schools, while in other places private evening schools had never played an important role (e.g., Louisville). In both cases, however, public evening schools were concentrated entirely in urban areas and often

[14] Some manufacturers provided evening schools for their employees even in the latter part of the nineteenth century. In 1884, for example, P. Lorillard Tobacco Co. in Jersey City opened an evening school a few blocks from their factory immediately after the state had enacted a law requiring youths age 12 to 15 employed in manufacturing or mining to attend day or evening school (Shaw 1884).

[15] In the case of New York City, however, the schools were quasi-public. The early evening schools were free, but the schools were financed through the general fund of the Public School Society, which was comprised of public money, as well as gifts and bequests. The schools, which were opened in 1833, were unsustainable since teachers from the regular day school were required to teach these evening sessions without extra compensation. Furthermore the establishment of these schools raised questions over the use of public money for such purposes. Consequently, the evening schools reverted into the "hands of philanthropic agencies until 1847" when the schools were again opened in conjunction with the public school system (Margulis 1927, 11-12). One credible source mentions that, "it is said Providence established evening schools as early as 1810" but no citations were given (Cubberley 1919, 587). Rhode Island Board of Education reported that evening schools opened in Providence "as early as 1840" and were brought under the control of the school committee in 1849 (Rhode Island Board of Education 1894, 69).

met in existing day school buildings (e.g., see Stone 1849).[16] For example, the first documented public evening school opened in the basement of a day school in Louisville in November, 1834. The school session was four months long and had an enrollment of 22 boys under the supervision of two teachers from the regular day school (Dexter 1904, 541). Although these evening schools drew support from public school funds, legislators and school boards often hesitated to invest heavily in this form of education. Consequently, some cities initially allowed the evening school administrations to secure the services of teachers on a voluntary basis or to supplement appropriations by charging nominal enrollment fees.[17] In most evening schools that charged registration fees, however, administrators collected payment only from students who could afford to pay and did not turn away any students "who were willing to attend and anxious to be instructed" (Stone 1849, 87).

The system of public evening instruction continued to expand throughout the latter half of the nineteenth century. By 1873, 35 of the 50 "principal cities" of the U.S. provided evening schools and 65,758 pupils enrolled in the schools (U.S. Bureau of Education 1874, xxix).[18] Table 1 illustrates the continual expansion of evening schools between 1887 and 1914. By 1890, the number of public evening schools had increased to 808 separate schools, operated in 165 cities and towns throughout the United States with enrollment of 150,770. Ten years later, while the number of cities operating evening schools had decreased slightly, there was an increase of enrollment to 203,000 pupils. In both years, evening school enrollment accounted for

[16] Although children in rural areas commonly worked in agricultural pursuits, schools were – to some extent – already organized around planting and harvesting schedules. This shorter length of the school year in rural areas, the greater dispersion of potential students, and less attention focused on social problems associated with out-of-school youths likely contributed to the lack of public evening school provision in rural areas.

[17] The first evening school in Louisville, for example, collected $2.00 per term from students. The two evening schools opened around 1849 in New Bedford, represent examples of schools that used volunteer teachers rather than charging registration fees. The city appropriated $600.00 for their support, but only a portion of the teachers received compensation and the rest "labored gratuitously" (Stone 1849, 88).

[18] For example, enrollment had reached 2,885 in Boston, 8,000 in Philadelphia, and 19,550 in New York City.

Table 1
Evening Schools in the United States, 1887-1914 (select years)

Year	Cities reporting evening schools	Evening Schools	Evening school teachers	Evening school pupils	Percentage of total public school enrollment	Percentage of public school enrollment in sizable cities
1887-88	148	-	3,267	141,664	1.17	-
1889-90	165	808	3,678	150,770	1.17	4.83
1891-92	148	852	4,140	174,419	1.30	5.90
1896-97	-	813	4,141	183,168	1.23	4.85
1897-98	138	780	3,907	185,000	1.22	4.64
1900-01	150	921	5,115	203,000	1.28	4.73
1902-03	158	882	5,126	229,213	1.41	5.09
1904-05	180	922	6,572	292,319	1.74	6.09
1905-06	203	1,054	7,497	314,604	1.86	6.25
1907-08	220	-	8,549	357,923	2.08	6.76
1909-10	227	-	9,326	374,364	2.09	6.89
1911-12	205	-	10,506	419,981	2.28	7.35
1913-14	-	-	-	605,475	3.15	9.46

Notes: Total public school enrollment does not include special institutions, (e.g., conservatories of music, business colleges, trade schools, schools of art and education, Indian schools, or schools for the "defective, dependent, and delinquent classes"). "Sizable" cities are defined as cities having population 4,000 or more in 1887 and 1889, population 8,000 or more in the years between 1891 and 1910, and population 10,000 or more in 1911 and 1913. The Bureau of Education implemented several initiatives (e.g., more detailed forms and more proactive collection practices) to improve data collection 1910-1912 (U.S. Bureau of Education 1912, 21).
Source: Calculated from United States Bureau of Education. 1888-1914 (various years). *Annual report of the U.S. Commissioner of Education.* Washington: G.P.O.

approximately 1.2 percent of the total public primary and secondary enrollment throughout the U.S. and about 5 percent of enrollment in cities with population of 8,000 or more. Evening school enrollment was even more quantitatively significant in heavily industrial cities. In 1900, for example, evening school students comprised 12 percent of public school enrollment in Paterson and 25 percent of enrollment in Lowell. By 1914, evening enrollment had increased to 605,475 students (i.e., approximately 3 percent of total enrollment and 9.5 percent of enrollment in cities with populations of 10,000 or more).

3.1 The Nature of Public Elementary Evening Schools

Specific arrangements for evening schools varied greatly by location, but classes were generally held three to five evenings per week, with sessions lasting between two and four hours (Sadler 1907, 649). Cities also differed in the length of time that evening schools operated during a given school year. These differences were substantial and remained so even in later decades. In 1888-89, for example, the schools opened for 50 evenings in Cambridge, 120 evenings in Malden, and 180 evenings in Salem (U.S. Bureau of Education 1889, 855). It is not clear how these differences translated into differences in instructional time, however, since the length of each evening's sessions varied by city, as well.[19]

The schools were usually not broken into grades when first established, but some cities eventually divided classes into several age and proficiency categories as enrollments grew (e.g., establishing junior classes for ages 12 to 18 and senior classes for older students) (U.S. Bureau of Education 1870-1914; New York Good Government Club 1895). The course of study in the elementary evening schools mirrored that of public day schools, but placed greater emphasis on the core subjects.[20] Thus, the curriculum usually consisted of instruction in reading, writing, arithmetic, geography, history. Older students could also take courses in bookkeeping, composition, and drawing. In addition, most elementary evening schools offered English instruction to foreign-born persons of all ages.

[19] The length of evening session (in hours) was reported sporadically in state education reports and – in 1909 – the U.S. education report. In 1909, it is clear that the differences were real in some cities (e.g., Gloucester operated evening schools for 35 evenings and a total of 70 hours, while Worcester operated evening schools for 112 evenings and a total of 224 hours). In other cities, the differences were only apparent (e.g., Quincy and Gardner operated schools for 40 and 82 evenings (respectively) for a total of 80 and 82 hours of instructional time (U.S. Bureau of Education 1910, 773).

[20] Day school subjects such as spelling, penmanship, literature, physical education, music, and art were usually not available in evening elementary schools. Courses in home arts (e.g., sewing and cooking) were offered, however, in some female evening schools (U.S. Bureau of Education 1870-1914).

3.2 Evening School Teachers

By 1887, there were 3,267 teachers in the evening schools (again, see table 1). This was fairly constant throughout the next decade, but increased substantially around the turn of the century. By 1907, more than 8,500 teachers worked in the evening schools. This represented approximately 7 percent of the total number of public school teachers in cities with population of 8,000 or more. In most cases, due to funding constraints, teachers were recent normal school graduates without much teaching experience, or "moonlighters" from the day schools.[21] For 1907, the first year that the statistics were reported, 49 percent of the evening school teachers also taught in the day schools. Schools in the North Central region were most likely to employ teachers from the regular day schools. Specifically, 79 percent of evening school teachers in the region were moonlighting, while 42 to 50 percent of evening school teachers in other parts of the country worked in the day schools (U.S. Bureau of Education 1908, 422). Approximately 51 percent of the teachers were female in both 1887 and 1897, but this had increased to 60 percent by 1907 (see table 2).[22]

3.3 Gender and Evening Instruction

Despite the large numbers of girls who could not attend school during the day due to employment or who had missed earlier schooling opportunities, educators were initially reluctant to establish night schools for females (e.g., see Stone 1849). The primary concerns included the

[21] When day school teachers were employed, the quality of evening school instruction was limited by the fact that moonlighters were often exhausted after a full day of teaching. Cities that attempted to avoid this problem – by refusing to employ moonlighters in the evening schools – often recruited from a lower quality pool of applicants (i.e., recent graduates and teachers unable to secure or retain more desirable employment in the day schools).

[22] Detailed information regarding average rate of pay per evening for teachers was made available intermittently in state education reports. As was true in public day schools, average evening pay rates for male teachers usually exceeded those of female teachers (e.g., see Connecticut Board of Education 1911, 243).

Table 2
Gender of Evening School Teachers in the United States, 1887-1907 (select years)

	Proportion Female						
	1887	1891	1897	1900	1902	1904	1907
N. Atlantic	0.56	0.62	0.55	0.62	0.57	0.61	0.61
N. Central	0.31	0.36	0.29	0.35	0.48	0.60	0.58
West	0.51	0.52	0.51	0.61	0.60	0.52	0.60
South	0.71	0.63	0.53	0.45	0.50	0.51	0.52
U.S.	0.51	0.56	0.51	0.59	0.56	0.61	0.60

Notes: This includes cities with population of 4,000 or more in 1887 population of 8,000 or more in the other years.
Source: Calculated from United States Bureau of Education. 1888-1908. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

propriety of girls attending school at night (specifically, the potential for females to use school attendance as a pretense for evening excursions or for socializing with male students), their safety in traveling to and from classes in the evening, and the lower social gains to their attendance relative to that of boys' attendance.[23] The last of these objections centered on the higher probability of idle, uneducated boys engaging in vagrancy and crime, rather than lower social benefits to educating females in general. Some cities experimented with female evening schools, however, either opening separate schools for their instruction or dividing the evenings during the week by gender. By 1849, for example, the New York City school system designated four of its fifteen evening schools for females. In places where females had the opportunity to attend, they attended more regularly than the males and seemed to "take a deep interest in their studies" (New York Board of Education 1849, 14; Stone 1849, 87; U.S. Bureau of Education

[23] See, for example, Stone (1849) and Connecticut Board of Education (1880, 210).

1870, 54).[24] The successes of these early endeavors, and evidence that the girls' safety was uncompromised by their attendance, later served to allay fears about establishing public evening schools for females elsewhere (e.g., see New York Board of Education 1849).

3.4 Expanding Role of Evening Schools

As educators lauded the successes of evening schools in their districts, publicly supported elementary evening schools continued to gain popularity. In response to the needs of students desiring secondary education, who were unable to attend school during the day, cities also began to establish evening high schools to "supplement and extend the work of the public school" (U.S. Bureau of Education 1870-1914; New York Good Government Club 1895, 18). The first evening high school opened in Cincinnati, OH in 1856 and evening high schools were opened in New York City in 1866, Chicago and St. Louis in 1868, Philadelphia in 1869, and Boston in 1870. By 1870, there were 60 public evening high schools in the United States and an even larger number of evening elementary schools (Cubberley 1919, 587; Margulis 1927).

While the elementary evening schools were patronized almost entirely by relatively poor students, some youths in middle income families seized opportunities to attend the evening high schools. The course of study in the high schools was much broader and included subjects as diverse as Latin, German, chemistry, algebra, geometry and trigonometry, astronomy, history, political science, anatomy, physiology, and various vocational courses (New York Good

[24] In 1848, the New York Board of Education Committee on Evening Schools investigated these concerns and concluded that "…such schools (for females) are not only necessary, but that they can with propriety be established, and the result could not be otherwise than highly beneficial to a numerous class of our own population that cannot be reached by any of the present means of public instruction" (New York Board of Education 1848, 4). Some of the persons contacted to give testimony on this issue pointed out that the morality of females who had attended privately-sponsored evening schools was never in question, that the girls were earnestly seeking knowledge, and they often traveled to and from classes in groups or accompanied by male companions. Some female evening schools ended earlier in the evening than boys' schools in the same city, as a precaution against some of these potential problems (e.g., see Margulis 1927).

Government Club 1895).[25] Because of the more advanced curriculum in the high schools, evening school officials would often require incoming students to provide proof of completion of the lower grades or require the students to pass an entrance examination.[26] Some evening high schools provided certificates for students who successfully completed their course of studies and anecdotal evidence suggests that the schools provided a pathway to college for some working students (e.g., see U.S. Bureau of Education 1870, 54; Massachusetts Board of Education 1902, 98; Boone 1907, 271).[27]

Although national evening school enrollment figures were not reported by type of school (i.e., elementary, high, or vocational school) during the nineteenth century, the breakdown was reported in 1907 (see table 3). In this year, elementary enrollment accounted for approximately 69 percent of the classified evening school students, and the remaining students were divided roughly equally between high school and vocational studies. Elementary evening school enrollment made up the largest part of enrollment in all regions, but it comprised the largest percent of enrollment in the South, where public evening vocational schools were virtually nonexistent. With the exception of the South, females were more equally represented in the vocational and secondary schools. Specifically, females made up 28 percent of elementary evening school enrollment for the entire U.S., but accounted for 35 and 56 percent of secondary and vocational evening school enrollment, respectively.

[25] Vocational course offerings often included mechanical or architectural drawing, dressmaking, millinery, stenography, and bookkeeping (New York Good Government Club 1895; Dexter 1904).
[26] The evening high school in Boston, for example, began administering an entrance exam in 1880. The exam "consisted of reasonable questions (that were) intended to make the school serve those for whom it was designed. It was confined to reading, writing, arithmetic, and geography…By most of the applicants it was easily passed, and but few were rejected (U.S. Bureau of Education 1881, ccxxxix).
[27] For example, a belt-maker attending an evening high school in Providence finished courses in Latin, Greek, mathematics, etc. and, after three years of study in the school, entered Brown University (U.S. Bureau of Education 1870, 54).

Table 3
Type of Evening School Enrollment in the United States, 1907
(by region and gender)

	Elementary		Secondary		Vocational		All Classified		
	Total	Female	Total	Female	Total	Female	Total	Female	Total
N. Atlantic	157,825	0.30	37,202	0.36	39,245	0.58	234,272	0.36	264,961
N. Central	32,207	0.23	6,879	0.31	5,165	0.51	44,251	0.27	58,329
West	11,194	0.14	1,211	0.29	2,714	0.35	15,119	0.19	16,527
South	14,663	0.36	2,680	0.28	59	0.17	17,402	0.35	18,106
U.S.	215,889	0.28	47,972	0.35	47,183	0.56	311,044	0.34	357,923

Notes: This includes cities with population of 8,000 or more.
Source: United States Bureau of Education. 1908. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

3.5 Successes and Challenges of the Public Evening Schools

The annual education reports are filled with anecdotal evidence that suggests working youths and immigrants benefitted tremendously from the system of evening schools.[28] School superintendents often described the enthusiasm with which evening school students embraced learning and the gains for such students in terms of literacy, numeracy, and vocational skills. A school superintendent in Massachusetts, for example, claimed that in the evening schools of Springfield and New Bedford, "work has been done that would compare favorably with many day schools" (U.S. Bureau of Education 1887, 245). Some educators argued they were effective and cost efficient, even when compared to the day schools (e.g., see U.S. Bureau of Education 1870, 170). Moreover, evening school advocates viewed the schools as indispensible tools for assimilating the children of immigrants (e.g., see U.S. Bureau of Education, 1870-1914).

[28] Chapter IV evaluates this claim econometrically.

Critics of the evening school approach, however, emphasized the difficulties associated with enticing students to enroll in evening schools, persist in their studies, and benefit from the coursework. For example, in some cases, employers posted information about evening schools in their factories, educators hung fliers near the location of the school, and local newspapers posted notices, but nonetheless community members often remained unaware of the existence of evening schools or the scheduled term dates (U.S. Bureau of Education 1870-1914; Margulis 1927). Even when the community was well-informed, awareness was not always enough to secure enrollment sufficient to warrant continued provision of the evening schools. Educators complained that some parents appeared apathetic regarding their children's education or seemed largely unaware of the potential returns to schooling (U.S. Bureau of Education 1870-1911; Massachusetts Board of Education 1894).

Evening schools were also subject to the critique that they provided low quality services to their students. School boards were often unable or unwilling to invest heavily in the evening schools. Consequently, evening schools found it difficult to hire and retain qualified teachers, to develop curricula and text books tailored to the needs of older youths, and to teach effectively given the short evening sessions, compressed school terms, and occasionally exhausted students.

These were certainly obstacles to the success of evening schools, but the most significant impediment was irregular attendance. Table 4 presents the average daily attendance at day and evening schools, along with enrollment in both types of schools.

Table 4
Enrollment and Average Daily Attendance in City Schools, U.S.
(select years, by region and school type)

	1891-92			1902-03			1911-12		
	Enrolled	Avg. Daily Attendance	(%)	Enrolled	Avg. Daily Attendance	(%)	Enrolled	Avg. Daily Attendance	(%)
N. Atlantic									
Day	1,373,358	950,395	69	2,068,408	1,584,309	77	2,549,691	2,045,301	80
Evening	126,468	50,907	40	188,580	76,117	40	279,012	100,653	36
N. Central									
Day	897,167	663,521	74	1,402,843	1,079,549	77	1,601,994	1,246,219	78
Evening	35,043	13,305	38	24,843	11,448	46	90,550	31,764	35
West									
Day	145,988	103,177	71	269,449	202,464	75	432,014	338,260	78
Evening	6,432	2,294	36	9,084	3,135	35	25,746	8,083	31
South									
Day	364,277	263,423	72	533,371	385,935	72	712,859	528,272	74
Evening	6,476	3,558	55	6,706	3,215	48	24,673	8,916	36
U.S.									
Day	2,780,790	1,980,516	71	4,274,071	3,252,257	76	5,296,558	4,158,052	79
Evening	174,419	70,064	40	229,213	93,915	41	419,981	149,416	36

Notes: This includes cities with population of 8,000 or more in 1891 and 1902, and includes cities with population of 10,000 or more in 1911.
Source: Calculated from United States Bureau of Education. 1891-1912. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

In each of the years summarized (and for each region of the U.S.) the ratio of average daily attendance to enrollment was greater in the day schools than evening schools. In the 1902-03 school year, for example, average attendance was 41 percent of enrollment in the evening

schools and 76 percent in the day schools.[29] Although the reasons given for absence (or early drop-out) varied across place and time, several commonalities existed. When an evening school was first established in a given area, it was common for students to enroll in the schools and then drop out after a few sessions once the novelty had worn off (e.g., see U.S. Bureau of Education 1870, 236; U.S. Bureau of Education 1887, 245).[30] Of the students who remained after the first few sessions, other activities and amusements competed for their evening time. For example, truancy was more common on fair evenings, evenings when winter amusements were in full swing (e.g., as sledding, ice skating, and so on), during theater events, and evenings when unions or political parties held gatherings near the school (Margulis 1927; U.S. Bureau of Education 1881, ccxli). Household responsibilities, caring for siblings or ailing family members, personal illness, and overtime work also drew students away from their evening studies. Even among the most dedicated students, the exhaustion of working full days before coming to class at night represented an obstacle to regular attendance and effective learning.

Despite the challenges discussed above, cities throughout the U.S. continued to establish evening schools, learning from their own and other cities' experiences. Educators advertised the schools more widely so as to give potential students advance notice, lengthened the terms, and reorganized them around the holiday season. School officials in a many cities mitigated the problem of students dropping out soon after the start of term by charging a minimal enrollment fee (usually the sum of $1 or $2) to be returned to the student upon completion of the term. This scheme often reduced the number of students who enrolled simply out of curiosity or peer

[29] It is important to understand, however, that a substantial part of this difference is explained by evening school pupils who attended for one or two sessions before dropping out, rather than just frequent absences on the part of students who persisted to the end of term.

[30] In 1870, New York City, nearly one-third of evening school students dropped out within the first month. In 1886-87, registration in the Salem evening schools was 279; Average attendance in November was 155 and average attendance was only 40 pupils by February (U.S. Bureau of Education 1887, 245).

influence, and helped school administrators to plan better for staffing needs (e.g., see U.S. Bureau of Education 1887, 246; Rhode Island Board of Education 1899, 108). Teachers also attempted to check up on students who were absent without excuse, either through sending a note, visiting the student's home or workplace personally, or delegating another student to do so. Other strategies focused on creating a pleasant environment for students to come to after a hard day of work. These efforts included improving instruction by avoiding dull exercises, creating extracurricular clubs, hosting dances and athletic events, and inviting outside speakers to give talks on various topics of interest (U.S. Bureau of Education 1870-1914; Margulis 1927, 61). Such efforts may have had marginal benefits, but overall the problems associated with irregular attendance, fatigued students, perceptions of low quality instruction, and compressed instruction time remained and led some to question the supposed benefits of establishing evening schools (e.g., see U.S. Bureau of Education 1880, ccxli; U.S. Bureau of Education 1887, 257).

3.6 The Transformation of Public Evening Schools

Around the turn of the century, evening schools throughout the U.S. experienced a major shift in focus. State legislation raising the minimum working age, strengthening compulsory education requirements, and improving enforcement in both of these areas played an important role in this progression.[31] These laws reduced the need for elementary evening schools because younger children were forced to attend day school regardless of their employment status. Many states also required older children to attend continuation or part-time schools if they had not completed a minimal level of schooling prior to beginning work, had not obtained a basic level

[31] See Ensign (1969) for a summary of child labor and compulsory education legislation in the early twentieth century. The pace of legislative change was especially brisk in the first decade of the twentieth century. Although only 24 states had established minimum age requirements for manufacturing employment by 1900, 43 states had done so by 1910 (Moehling 1999).

of proficiency, or were simply under a specific age. Given uncertainty about the effectiveness of evening schools, as described above, most of the laws required that compulsory continuation attendance be fulfilled between the hours of 8 a.m. and 5 p.m.

At the same time, the focus of evening schools began to shift away from educating working children and toward providing the children of foreign-born parents and adult immigrants with the basic elements of English education and preparing them for citizenship. This change occurred gradually over the period 1895 to 1914, as cities that already operated evening schools began to designate classes specifically for immigrants, and to adopt new curriculum to meet their needs (U.S. Bureau of Education, 1870-1914; Cubberley 1919). The beginning of World War I accelerated this process greatly, however, as observers became increasingly concerned about the presence of a "new class of immigrants" who neither spoke English nor actively participated in American civic life. In 1915, the U.S. Bureau of Education provided advisory services and over forty states set up Americanization programs (designed to facilitate assimilation into U.S. culture and promote literacy) and provided local school boards with financial assistance to implement the programs (Cubberley 1919, 586).[32]

The Americanization programs were structured primarily into evening courses for teens, young adults, and even older immigrants. One such program commenced as part of the evening elementary schools in New York City. The goals of this program included getting immigrants in school and keeping them in school (by advertising schools in various languages and tailoring the curriculum to their needs), teaching them the English language and about American institutions (by employing talented, well-trained teachers, "by imbuing the immigrant with American ideals

[32] Behind school-based Americanization programs was the idea that "no other agency could mould into one people the millions who, from every clime, seek homes upon our shores…however diverse may be the habits and customs of those who emigrate to our shores, their children are in a single generation assimilated through the influence of the public schools" (Pittsburgh School District 1876, 40).

of living," and opening community centers), and preparing them for citizenship (by offering separate classes for declarants and petitioners, discussing history and civics, and practicing citizenship tests) (Margulis 1927, 20).[33]

During this period, the federal government (and private organizations) also began directing funds to support various adult education initiatives aimed at improving basic skill levels and providing vocational training. Evening high schools, which had traditionally offered courses in mechanical drawing and bookkeeping, for example, expanded these types of course offerings to take advantage of the new sources of funding. This helped to transform the evening school systems from primarily educating young students to teaching more mature pupils, and the standard curriculum began to include more scientific, technical, home arts, commercial, and industrial lines of study. The enactment of the 1917 Smith-Hughes bill for vocational education further advanced the movement of evening high schools toward vocational training and evening schools for children almost entirely disappeared (Cubberley 1919, 588).

4. Summary

Evening schools that emerged in the late-nineteenth century held great potential for helping working youths and the children of immigrants acquire a basic level of education, obtain preparation for work or citizenship, or in some cases continue to higher education. The historical evidence gathered and synthesized in this chapter suggests that many youths seized these opportunities and benefitted from the system of public evening instruction. The same aspect of evening instruction that held so much promise, namely youths' ability to combine work and

[33] Following WWI, and the sharp decline in immigration that had occurred in conjunction with the war, evening schools struggled to make up the shortfall in enrollment. Some of the recruitment efforts included partnering with more Americanized immigrants to promote the schools within the immigrant communities and engaging in citizenship drives (e.g., "Become an American-Drive" in New York in the early 1920s) (Margulis 1927, 22).

schooling, also posed challenges to the success of the schools, however. Problems such as fatigue among evening school students, irregular attendance, and compressed instructional time limited the potential for evening schools to remain a permanent feature of the public schools, and ultimately evening schools for school-aged children faded away as day school enrollment and attendance among working youths increased.

Although the timing of the rise and fall of evening schools can be accurately documented from historical sources, understanding the factors that promoted the schools and identifying the impact that the schools had on educational outcomes is far more difficult. The remaining chapters make use of newly compiled information on evening schools, large samples of individual-level census data, and a unique survey of working children in New Jersey, to examine the diffusion of evening schools and to measure the schools' influence on youths' school attendance and literacy.

CHAPTER III

PUBLIC EVENING SCHOOL PROVISION IN THE UNITED STATES, 1870 to 1910

Although evening school enrollment continued to increase throughout the late-nineteenth century, the expansion was far from uniform across space. Some states and cities embraced this non-traditional form of education much more readily than others. Since the potential benefits of evening schools were widely discussed among educators in the nineteenth century, one is left with the question of why some cities chose to open evening schools while others did not. This chapter begins by discussing the role of state legislation regarding evening school provision and the education components of child labor laws. I then turn to the question of why cities within states differed in their provision of evening schools. In particular, I propose several hypotheses that may explain these differences, and then use *Annual Reports of the U.S. Commissioner of Education* and data from the *Integrated Public Use Microdata Series* (IPUMS) to construct a city-level, panel data set that allows me to econometrically test these (often competing) hypotheses.[34]

1. Evening School Provision and State Legislation

Figure 1 (a, b, and c) maps the percentage of large cities (of 10,000 inhabitants or more) within each state that provided evening schools in 1880, 1890, and 1900. For each of the years, the regional and state differences are remarkable. Throughout the period, cities in New Jersey, New York, Massachusetts, and Connecticut, for example, were far more likely than cities in

[34] Ruggles et al. 2004

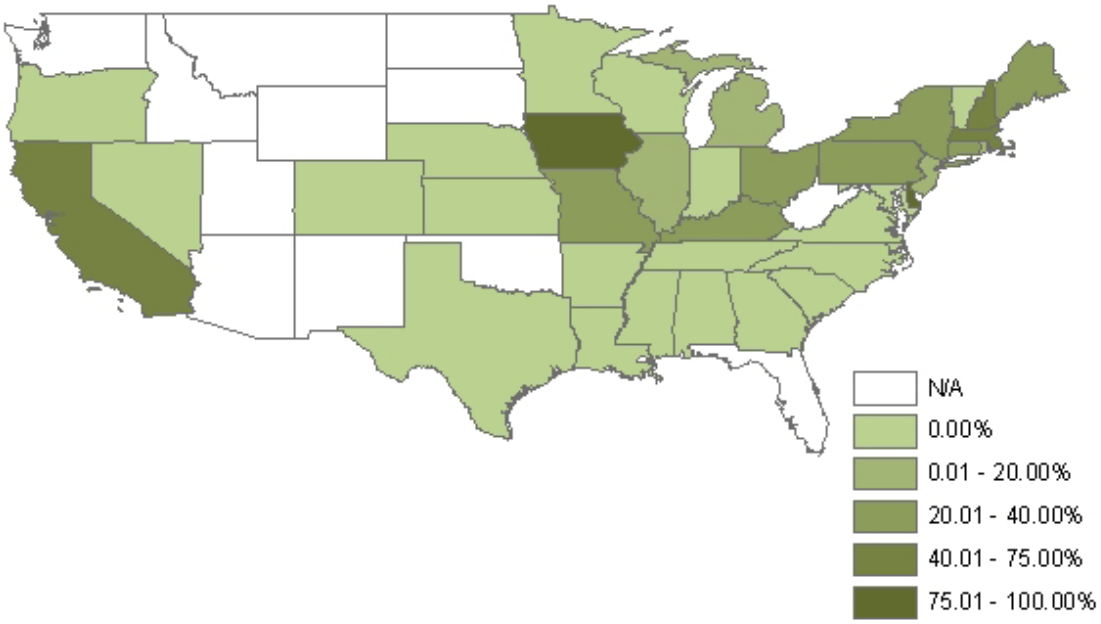

Figure 1a: Percentage of large cities (population 10,000 or more) providing evening schools (1880)

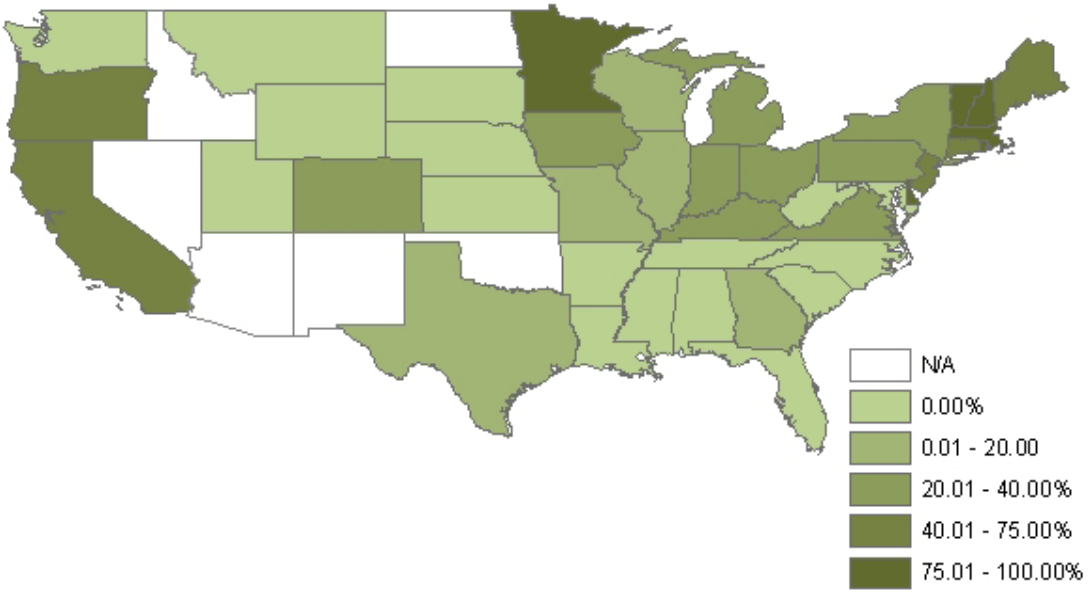

Figure 1b: Percentage of large cities (population 10,000 or more) providing evening schools (1890)

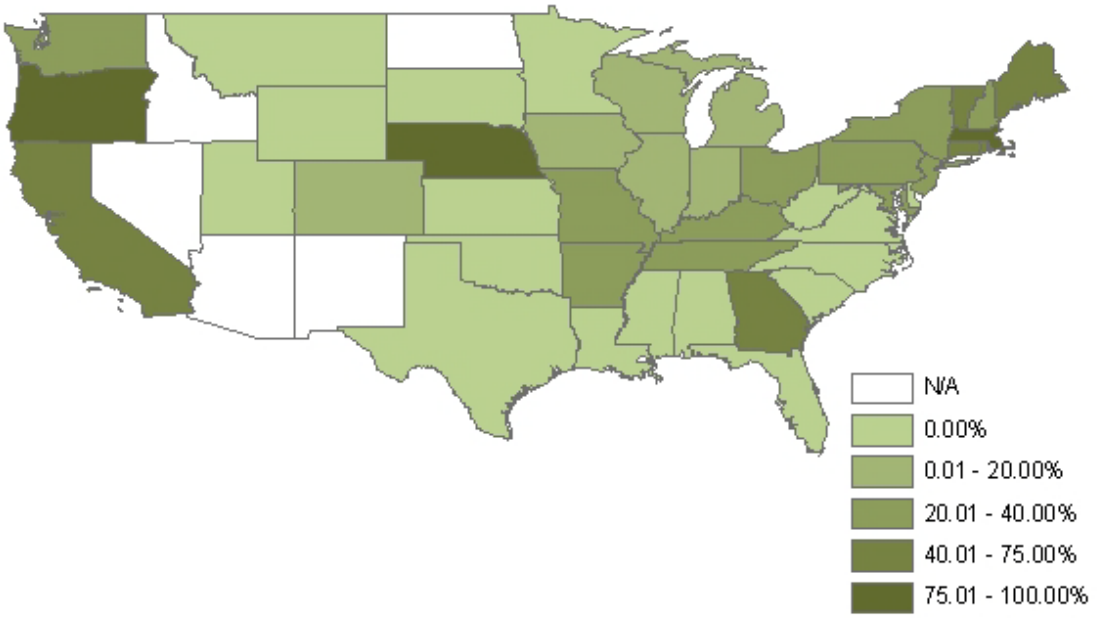

Figure 1c: Percentage of large cities (population 10,000 or more) providing evening schools (1900)

Notes: The percentage of large cities providing evening schools is estimated by taking the number of cities reporting one or more evening schools divided by the number of large cities reporting any data (and multiplying the ratio by 100). Since some states (or territories) did not have cities with population 10,000 or more or failed to provide data for some of the cities' school systems, the resulting percentage is the best estimate available.
Source: Calculated from the United States Bureau of Education. 1871, 1881, and 1901. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

other states to provide evening schools. These persistent differences across states may be related to differences in state income and education levels, the prevalence of child labor or immigrants in the states, the training and experience of state school superintendents, or legislation regarding evening schools. Nonetheless, states that resembled one another in terms of per capita income, day school enrollment levels, industrial structure, and size of the foreign born population utilized evening instruction to greater and lesser extents.

Although in most states existing school legislation did not specifically limit schools to daytime operation, objections by some individuals to the use of public money for evening

instruction (e.g., New York City) and the need for increased appropriations to meet demand drove educators to seek formal authorization for evening schools. "As the necessity for evening schools was being continually impressed upon its members," the State Board of Education in New York and other states recommended the enactment of laws to provide for the establishment and support of such schools (Margulis 1927, 12). The first general state law authorizing the establishment of evening schools, and appropriating funds for their purposes, was enacted by Ohio in 1839. New York and Massachusetts followed in 1846 and 1847 (Cubberley 1919, 428). Table 5 presents a snapshot of evening school legislation still in effect as of 1906.

Several features of the state laws warrant mention. First, while the provision of evening schools was (either expressly or implicitly) the prerogative of the local school board in most states, Massachusetts and Connecticut actually mandated the provision of evening schools in larger cities. For example, in 1883, Massachusetts enacted legislation that required cities (with population of 10,000 or more) to provide evening elementary schools, and three years later passed legislation that required cities (with population of 50,000 or more) to provide evening high schools. Connecticut passed a similar law in 1893. Other states required cities to provide evening schools only when sufficient demand for the schools existed. Pennsylvania, Indiana, and Maryland are examples of states that permitted (or required) cities and towns to establish evening schools only following petition from 20 (or in some cases more) youths who would attend the schools if they were made available.

Second, school superintendents and legislators expressed hope that a comprehensive system of evening instruction would help achieve the goals of compulsory schooling laws, which had proved extremely difficult to enforce due to a lack of cooperation from parents and unwillingness or inability to devote sufficient resources to enforcement. Highlighting the

Table 5
State Legislation Regarding Provision of Evening Schools (as of 1906)

California	Night Schools may be established in cities of the 5th class.
Connecticut	Every town or school district having 10,000 or more inhabitants shall establish evening schools for instruction of persons over 14 and towns having less than 10,000 may by vote establish such schools
Georgia	May be established by board of education of any county for instruction of youth over 12 years of age, prevented by daily avocations from attending day school
Hawaii	May be established by Department of Public Instruction
Indiana	Shall be established by trustee in city having population of 3000 or more on petition of 20 or more parents having children between 14 and 21, who are compelled to be employed to aid in support of family. Persons between 14 and 30 may attend.
Louisiana	May be established in parish of Orleans for instruction of such youth as are prevented by daily avocations from receiving instruction during the day
Maine	Any city or town may appropriate money for evening schools
Maryland	May be established in Allegany county for males under 14 on application of at least 30 persons of age required of students in high schools, for study of reading, writing, arithmetic and such advanced studies as may be necessary
Massachusetts	Any town may and every city or town having 10,000 or more inhabitants shall maintain evening schools for instruction of persons over 14 in orthography, reading, writing, the English language, and grammar, geography, arithmetic, industrial drawing, both free-hand and mechanical, history of United States, physiology and hygiene
Minnesota	May be established for all persons over 10 unable to attend day schools
New Hampshire	May be established on petition of 5% of legal voters in cities and towns having more than 5000 inhabitants, for instruction of persons over 14.
New Jersey	May be established by board of education for instruction of persons over 12
New York	No special provision in school law for establishing, except in cities of the first and second class; also said schools are provided for in certain city charters
Ohio	May be established by board of education on petition of parents, which petition shall contain names of not less than 25 youths of school age (6-21) who will attend
Pennsylvania	May be established by school directors etc. on application of parents of 20 or more pupils over 6 years of age
Puerto Rico	Night schools may be established by Commissioner of Education on application of 20 young persons unable to attend school for justified reasons
Rhode Island	Annual appropriation made for support of evening schools in several towns of the state
Vermont	May be established by district.
Washington	May be established by board of directors

Source: University of the State of New York, Attendance and Child Accounting Division. 1907. "A summary of the compulsory attendance and child labor laws of the states and territories of the United States, compiled by James D. Sullivan, Chief, Attendance Division, N.Y. State Education Department." Albany, NY: N.Y. State Education Department.

advantages of providing evening schools over enforcing compulsory day school attendance, one superintendent asserted that parents would be overjoyed at such a "favorable opportunity for (their children) to acquire the rudiments of an education without intermitting the labors on which the families to which they belong practically depend for subsistence" (Ensign 1969, 63). Consequently, some states coupled evening school provision laws with legislation that permitted the education requirements of child labor laws to be satisfied with evening school attendance.[35] Moreover, several of the state laws (e.g., New Hampshire, Connecticut, and Illinois) also required illiterate youths who were past the compulsory schooling age to continue to attend evening schools as a condition of employment.[36]

Finally, legislators that were concerned about the potential for youths to substitute evening school attendance for day school attendance authorized the provision of public evening schools only for youths who could not feasibly attend the public day schools. Minnesota, for example, permitted cities to establish evening schools for all persons over 10 years of age "unable to attend the day schools" and Georgia permitted counties to establish the schools "for instruction of youth over 12 years of age, prevented by daily avocations from attending day school."

2. Within-State Variation in Evening School Provision

While differences in state legislation may help to explain why evening schools were more pervasive in some states than others, the substantial variation in evening school provision across cities within each state is of greater interest. First, the laws in some states, such as Massachusetts

[35] For example, one state superintendent argued that more attention should be given to the evening schools as "stricter laws for school attendance are soon to be introduced" (U.S. Bureau of Education 1872, 169).
[36] Appendix A provides a snapshot (as of 1906) of compulsory schooling and child labor laws as they relate to evening school attendance.

and Connecticut, which compelled cities to provide evening schools, were passed after the majority of large cities were already providing evening schools. Second, even once the laws were enacted, it is clear that some cities did not comply with the mandate to provide evening schools. For example, in 1899, 7 of the 16 cities in Connecticut that were required by law to offer evening instruction did not act in accordance with the mandate (U.S. Bureau of Education 1900).[37] Instead, given the highly decentralized control of U.S. education, cities adapted their education systems to local needs and priorities. This section examines the local social, political, and economic conditions that influenced cities' decisions regarding evening school provision.

2.1 Determinants of Evening School Provision

The qualitative historical records suggest that concerns regarding the prevalence of child labor drove calls for the establishment of public evening schools. However, since certain industries, such as textiles, were much more likely to employ children than other industries, and there was a significant degree of industrial concentration across cities during this period (e.g., see Kim 1995; 2006), the city's proportion of children and youths engaged specifically in manufacturing may be a better predictor of night school provision.[38] Given that 30 percent of individuals employed as domestic servants in 1870 and 1880 were under 19 years of age, cities with higher employment of youths as domestic servants might also expect greater benefits from opening evening schools (IPUMS).[39]

[37] Cities that failed to comply mentioned in both state and national education reports, but the reports contain neither discussion of the reasons for non-compliance nor consequences the cities might have faced (Massachusetts Board of Education (various years); U.S. Bureau of Education 1870-1914).

[38] Although child labor is the primary rationale cited for evening school provision, many large cities where child labor was prevalent chose not to provide evening schools. In 1900, for example, 32 percent of youths (ages 10-17) in Troy (and 31percent in Jamestown, 23 percent in St. Paul, and 22 percent in San Diego) worked (IPUMS). Evening schools were not provided in any of these cities.

[39] Domestic service work includes occupations in private households, laundry/dying service, hotel service, or dressmaking.

Although evening schools did not evolve into a tool of the Americanization campaign until much later, educators were aware even in the early phases of such schools that growing immigrant populations had little or no education, especially in reading and writing English. Moreover, during the period 1870-1900, immigrant children (ages 6 to 18) were almost twice as likely as their native-born counterparts to report occupations other than school (IPUMS). Consequently, cities with larger foreign-born populations would have likely opened evening schools in response to the educational needs of this sub-group.[40] Annual education reports provide evidence consistent with this hypothesis. For example, major cities often established evening schools that offered instruction in other languages (e.g., German) to reach youths and young adults who could not write or fluently speak English.

Additionally, it may have been the case that cities with more educated populations (as measured, for example, by adult literacy rates) faced greater pressure to open evening schools for working illiterates. Night schools may have represented a solution to the problems cities faced, independent of the prevalence of child labor, such as high proportions of school-age children who were not enrolled in school (or work) or who had passed the primary school age but remained illiterate. For example, some urban residents feared the growing masses of youth with "idle, vicious and pilfering habits, found loitering in the streets, or hanging about places of public resort, polluting the atmosphere by their profane and vulgar speech, seducing to their own bad practices children of the same and other condition of life, and originating or participating in every street brawl and low-bred riot" (Stone 1849, 86).

[40] Standard public choice models predict that cities with more homogeneous populations (in terms of income or ethnicity, for example) and communities with fewer elderly members of the population will allocate more resources to public goods such as education (e.g., see Epple and Romano 1996; Fernandez and Rogerson 1995; Alesina et al 1999; Poterba 1997). This need not be the case if substantial externalities to education exist, however (e.g., see Stiglitz 1986). If, as Chapter II suggests, concern regarding externalities to the education of immigrants were considerable, then cities with larger immigrant populations would have been more prone to provide evening schools.

Finally, the resources available to the school likely mattered. During this time period, for example, urban school systems that faced rapidly growing populations and political resistance to higher taxes pursued a number of creative strategies to avoid turning away potential students. These strategies included the use of temporary structures, basements or hallways, and operating day schools in double shifts (Bliss 1898; Hall et al. 1905; Seller 1976). It is possible that evening classes also posed a feasible solution for alleviating overcrowding, as well, in school systems unable to adequately fund their educational needs.[41] Alternatively, cities that had better school systems, higher overall enrollment rates, or more resources available, might have chosen to augment their educational system with a night school component, as a safety-net to catch children and youths who missed out on the benefits of schooling.

2.2 Data and Econometric Framework

To gauge the influence of these factors on school boards' decisions about offering evening schools, I collected city-level data on the existence of evening schools from the *Annual Reports of the U.S. Commissioner of Education* for 1871, 1880, 1899-1900, and 1909-1910. The reports also provide information about enrollment in day schools, the receipts of the public school system, and the availability of spaces for study (which school systems reported based on classroom and desk availability) in the cities' day schools.[42] From these data, I also generated an "overcrowding" indicator variable, which equals 1 if the day school enrollment exceeded the available spaces for study. To supplement the education data, I calculated various city-level characteristics using individual-level census data from IPUMS and used city identifiers to match

[41] Although this possibility is not directly mentioned in the existing historical narrative on evening schools, evening schools are commonly used to alleviate overcrowding in the modern developing country context.
[42] Space availability is reported only in 1880 and 1900.

these characteristics with the administrative school data.[43] Summary statistics for these data are presented in Appendix B.

The following probit equation measures the correlates of evening school provision and allows a quantitative assessment of the factors that influenced the rise of evening schools:

$$\Pr(NS_{c,s,t} = 1 \mid \gamma_t, \xi_s, x_{c,s,t}) = \Phi(\alpha + \gamma_t + \xi_s + \beta x_{c,s,t}) \quad (1)$$

where $NS_{c,s,t} = 1$ is the case that at least one evening school is operational in city c, state or census region s, and year of observation t (either 1871, 1880, 1900, or 1910).[44] Φ is the cumulative density function of the standard normal distribution and $x_{c,s,t}$ is a vector of the time-varying city characteristics discussed in the preceding section, including the percentage of children (ages 10 to 17) who report occupations in the census, population size, and variables associated with a more educated and prosperous population (namely, the adult literacy rate and the percentage of adults working in professional occupations). The ratio of receipts of the school system (from tax receipts and state education funds) to the size of the school-aged population provides a measure of the resources available to the school system. Other characteristics, such as the percentage of the population that is foreign born and percentage elderly, are included to examine whether cities with more homogeneous or stable populations were more (or less) willing to establish evening schools.[45]

Equation (1) includes state and year fixed effects (ξ and γ) that will absorb time-invariant

[43] IPUMS datasets provide city identifiers only for cities with more than 10,000 inhabitants in 1870, the 98 largest cities in 1880, and cities with greater than 25,000 inhabitants for 1900 and 1910. Among the identifiable cities, the sample was further restricted to include only those cities providing data for at least 30 adults (ages 18-45). Only 46 of the cities have complete data for all years of observation, so I report the results from the full panel (of 186 cities). Appendix C lists the cities and indicates which ones operated evening schools in each census year.

[44] Although it would be desirable to move away from this discrete approach and measure "availability of evening schools" as a ratio of the number of evening schools (or evening school spaces, evening school enrollment, etc.) per child, this information is collected sporadically and has a much higher prevalence of missing data.

[45] This also facilitates comparisons with the existing literature's description of the rapid expansion of high schools that occurred in subsequent decades (Goldin 1998; Goldin and Katz 1999, 2006).

differences across states and place-invariant differences across time periods (such as national legislation or relevant political and economic conditions) that affected evening school provision. Consequently, the β coefficients are identified by *within-state* variation in city characteristics.[46]

2.3 Results

The first column of table 6 omits the state fixed effects and simply summarizes regional differences in evening school provision conditional on city-level economic and social characteristics. With the exception of New England where evening schools proliferated, cities in all other regions were less likely than the Middle Atlantic region (omitted category) to establish night schools, sometimes by wide margins. For cities in the West North Central region, for example, the probability of establishing evening schools was 24 percentage points lower than among cities in the Middle Atlantic region. This regional pattern stands in sharp contrast to the diffusion patterns apparent in the expansion of public secondary schools. In that context, Goldin (1998) and Goldin and Katz (1999; 2006) found that the Middle Atlantic region was the slowest to expand secondary education while the Great Plains (West North Central and West South Central regions) and West (Mountain and Pacific regions) led the high school movement.[47]

The second column and subsequent specifications all incorporate state fixed effects. In each specification, a 10 percentage point increase in the foreign-born share of the adult population (about 0.6 of a standard deviation) is associated with about a 3 percentage point increase in the likelihood of evening school provision. This is consistent with the hypothesis that

[46] This specification does not eliminate bias induced by state-specific or city-specific shocks that may be correlated with both the explanatory variables and evening schools. The introduction of an instrument for child labor in subsequent specifications helps address this issue.

[47] The concept and measure of expansion used in this paper, however, differ from those in Goldin (1998) and Goldin and Katz (1999; 2006). I examine the availability of (one or more) evening schools, whereas Goldin and Katz examine high school graduation rates.

Table 6
City-level Provision of Evening Schools, 1870-1910

	(1)	(2)	(3)	(4)	(5)	(6)
% Immigrants	0.003**	0.003**	0.003*	0.003**	0.003*	0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Adult Lit Rate	0.008*	0.008*	0.005	0.005	0.005	0.015
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.008)
% Professionals	- 0.011	- 0.013	- 0.011	- 0.010	- 0.011	- 0.042*
	(0.008)	(0.009)	(0.009)	(0.010)	(0.009)	(0.017)
Rcpts per child	0.002	0.003	0.005*	0.005**	0.005*	0.007
	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.006)
Ln (pop)	0.171**	0.196**	0.174**	0.177**	0.174**	0.158**
	(0.027)	(0.033)	(0.032)	(0.033)	(0.032)	(0.036)
% Yths Wkg			0.006**		0.006**	0.008*
			(0.002)		(0.002)	(0.004)
% Yths in Mfg				0.005**		
				(0.002)		
% Yths in Ret				0.002		
				(0.006)		
% Yths in Dom				0.001		
				(0.004)		
% Elderly					- 0.010	
					(0.013)	
Crowded=1						0.156*
						(0.064)
NewEng div	0.336**					
	(0.051)					
ENC div	- 0.167**					
	(0.026)					
WNC div	- 0.241**					
	(0.087)					
Mtn div	- 0.151**					
	(0.034)					
Pac div	- 0.038					
	(0.162)					
S.Atl div	- 0.014					
	(0.092)					
ESC div	- 0.090*					
	(0.039)					
WSC div	- 0.141					
	(0.109)					
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
State dummies	No	Yes	Yes	Yes	Yes	Yes
Obs p(ns=1)	0.55	0.55	0.56	0.56	0.56	0.53
Observations	549	549	448	448	448	188

Notes: Coefficients are from probit estimation and are reported as average partial effects. Robust standard errors, clustered at the state level, are in parentheses. * significant at 5% level; ** significant at 1% level.
Sources: School data are taken from United States Bureau of Education. 1871-1911. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O. All other variables are constructed from decennial population census data available through IPUMS (Ruggles et al. 2004).

evening schools were established to accommodate and assimilate the children of immigrants, and it is also consistent with a model of school provision in which there are strong perceptions regarding the positive externalities of evening schools as was often argued by proponents of the schools. Interestingly, it provides another contrast with the story of the high school movement in which more homogeneous communities led the way (e.g., see Goldin 1998; Goldin and Katz 1999, 2006).

Column 3 and subsequent specifications include a measure of youth employment. In columns 3 to 6, a 10 percentage point rise in the youth employment rate (about one standard deviation) is associated with an increase in the likelihood of maintaining an evening school of 6 to 8 percentage points. This is consistent with the qualitative accounts of evening school provision that emphasize evening schools as a response to concerns about working children. In column 4, I break down youth employment into manufacturing, retail, and domestic service industries. The results indicate that manufacturing employment, a highly visible target of progressive reformers, drives the correlation between youth employment and evening school provision.[48] As column 5 indicates, the (relative) size of the elderly population was not a statistically significant predictor of evening school provision.

The results in column 6, which are estimated from the subset of cities for which an "overcrowding" variable can be constructed, suggest that some cities maintained evening schools to alleviate the strain on overcrowded day schools.[49] Cities with overcrowded schools were nearly 16 percentage points more likely to offer evening schools, conditional on other covariates.

[48] Reformers were perhaps (relatively) less concerned with domestic workers. Van Kleeck (1914) also points out that domestic workers were often unable to leave work early enough to attend evening schools. This may account for the lack of statistical relationship between evening school provision and youth employment in domestic occupations.
[49] This finding is robust to specifying "overcrowding" as a continuous variable (i.e., number of day school students per desk/space available for study) or using various thresholds to define the overcrowding indicator (i.e., at least 115 percent of the available space is full, at least 125 percent of the space is full, etc.).

This finding is consistent with evidence that, "population continued to grow so fast that building programs could not keep pace with need and… economy minded taxpayers were not willing to allocate enough resources to solve the problem properly" (Seller 1976, 189). This finding presents further evidence that the educational system was adapting to meet the needs of children from poor families, despite the lack of political will to enforce compulsory attendance requirements or provide funding to fully accommodate day students. This further highlights parallels between evening schools in the context of the (historical) U.S. and current developing countries, since evening schools in the latter often emerge in response to the inadequacy of school facilities relative to size of the school age population.

2.4 Endogeneity Concerns and Instrumental Variable Results

Although the results square well with the historical narratives of evening school provision, some care must be taken in attaching a strong causal interpretation to the estimates in table 6. First, the estimates are vulnerable to the omission of city-specific variables that were correlated with both evening school provision and the variables in $x_{c,s,t}$.[50] Second, it is possible that child employment might respond endogenously to the provision of evening schools. This was the case, for example, when evening schools opened in Milwaukee around 1880. According to one historian, "There was one evil consequence that grew out of evening schools, namely, parents withdrew their boys and girls from the day schools to engage in employment under the mistaken belief that the young people could get as much education as was needful in the evening schools" (Bruce 1922, 637).

[50] All coefficients (except city size) are statistically indistinguishable from zero when city fixed effects are included. It is difficult to draw meaningful inference from this result, since there are (at maximum) four observations per city and estimating the incidental parameters (on the city fixed effects) likely produces inconsistent estimates. With the inclusion of city fixed effects in a linear probability specification, which should produce consistent estimates, all coefficients are statistically indistinguishable from zero.

I pursue two strategies to address the potential biases associated with omitted variables and endogeneity of child labor. First, using maximum likelihood methods, I estimate the probit equation for provision of evening schools simultaneously with a linear equation describing the percentage of children working. Consistency of these estimates relies heavily on parametric assumptions, and so I compare the results with those from a two-stage least squares (2SLS) linear probability specification for evening school provision. Despite the usual drawbacks of linear probability models (e.g., predictions outside of the 0-1 interval), this method should give good approximations of the average effects (e.g., see Wooldridge 2002).[51] Using either strategy requires finding at least one determinant of child labor that is not a separate determinant of evening school provision (i.e., that does not belong in equation (1)), and the 2SLS estimation requires a "strong" correlation between this variable and the potentially endogenous regressor (Bound et al. 1995).

Since many of the commonly-cited determinants of child labor (e.g., income, adult literacy rates, foreign born population, and city size) also influence the provision of evening schools, this is not an easy task. Therefore, I constructed the following "simulated instrument" for the proportion of children working in each city:

$$\left[\sum_{i}\left(\frac{children_{i,nation}}{adults_{i,nation}}\right)\times\left(adults_{i,city}\right)\right]\times\frac{100}{children_{city}}$$

where i indexes industry. This instrument exploits plausibly exogenous variation in the

[51] And, for each of the specifications reported in table 6, the linear probability estimates are almost identical to the average partial effects from probit estimation (and, so, are not reported in the table for comparison).

prevalence of child labor due to differences in industry structure across cities.[52] Specifically, for each year of data, and for each three-digit industry category in the IPUMS, I multiplied the ratio of child-to-adult workers at the national level by the number of adult workers at the city level to get the expected number of children in the year-city-industry cell. Then, summing over all industries in each city gives the expected number of children working, conditional on the industrial structure of the city at time t. Expressing this as a percentage of the total number of children in the city provides a determinant of child labor that can be excluded from equation (1).[53] Intuitively, the rationale for the instrument is that child labor in a given city is a function of the general production technology of industries in the city and an unobservable city-specific component. The instrument allows me to separate out these sources of variation in child labor and discard the city-specific variation that is prone to be correlated with provision of evening schools even after controlling for the factors included in equation (1).

It is important to keep in mind that the validity of the instrumental variable requires that industries are not making location decisions based on the availability of evening schools and that the industrial structure does not influence the likelihood of maintaining evening schools except through the prevalence of child labor. Controls for city size and receipts per school-age child (comprised mostly of local tax receipts) mitigate concerns that industrial mix reflects differences in the strain placed on education systems of large cities, as well as concerns that different industrial structures might influence the wealth level of the community and thus the quantity or quality of educational services. Furthermore, (in results omitted for the sake of brevity)

[52] Although the simultaneous equation maximum likelihood estimation accounting for endogeneity is clearly not an instrumental variable estimation technique, I call this constructed variable an "instrument" since it effectively satisfies an "excludability" requirement for the MLE estimation (i.e., it should not belong in the evening school provision equation, separate from the child labor equation) and must satisfy both the "excludability" and "relevance" requirements of an IV for the 2SLS estimation.

[53] See Bowen and Finegan (1969) or Moehling (1999) who use a similar "industrial mix" variable as a determinant of group-specific labor force participation and Hoxby and Kuziemko (2004), Hoxby (2001), and Bertrand et al. (2000) for other examples of simulated instruments.

alternative parameterizations of industrial mix – namely the inclusion of separate variables for the percent of adults in manufacturing, retail, and domestic employment – have little measurable impact on evening school provision, enrollment rates, or education expenditures per school-age child after controlling for the percentage of youths working.

The results from the simultaneous equation probit specification and the 2SLS estimates (along with the naïve probit estimates for the main specification) are shown in table 7. In both cases, after accounting for the potential endogeneity of children's work, the average effect is approximately zero and no longer statistically significant. Reduced-form estimates from estimating a probit equation for evening school provision that includes the exogenous variables in equation (1) and the instrument for child labor are consistent with this finding. As shown in column 4, the estimated average partial effect of the instrument is zero and not statistically significant. This suggests that either the instrument explains too little of the variation in child labor to be a valid instrument (i.e., it is a "weak" instrument) or that the true effect of child labor on evening school provision is zero (Angrist and Krueger 2001). However, the first stage results alleviate concerns over weak instrument bias since the F-statistic on the excluded variable is 104.49.[54]

[54] In the first stage, the coefficient on the instrument is 0.405 (with a standard error of 0.040). The Rivers-Voung, Wald, and Hausman tests fail to reject the null hypothesis that child labor is exogenous, but the potential endogeneity of child labor suggests caution in accepting the naïve probit estimates as measuring causal effects.

Table 7
Instrumental Variable Estimates for Evening School Provision

	Naïve (1)	2SLS (2)	MLE (3)	Reduced Form (4)
% Immigrants	0.003*	0.003	0.005*	0.003*
	(0.001)	(0.002)	(0.002)	(0.001)
Adult Lit Rate	0.005	0.006	0.007	0.005
	(0.004)	(0.004)	(0.006)	(0.004)
% Professionals	- 0.011	- 0.018	- 0.022	- 0.014
	(0.009)	(0.011)	(0.016)	(0.009)
Rcpts per child	0.005*	0.005*	0.007	0.005*
	(0.002)	(0.002)	(0.004)	(0.002)
Ln (pop)	0.174**	0.163**	0.293**	0.180**
	(0.032)	(0.022)	(0.063)	(0.031)
% Yths Wkg	0.006**	0.001	- 0.001	
	(0.002)	(0.005)	(0.011)	
IV Yths Wkg				- 0.000
				(0.003)
Year dummies	Yes	Yes	Yes	Yes
State dummies	Yes	Yes	Yes	Yes
Obs p(ns=1)	0.56	0.56	0.56	0.56
Observations	448	448	448	448

Notes: Coefficients in col. (1) are the naïve probit estimates and are reported as average partial effects; Col. (2) - (3) report results from 2SLS, and MLE accounting for the potential endogeneity of child labor. Constant term in col. (2) is -1.672, with s.e. 0.460. Robust standard errors, clustered at the state level, are in parentheses. * significant at 5% level; ** significant at 1% level.
Sources: School data are taken from United States Bureau of Education. 1871-1911. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O. All other variables are constructed from decennial population census data available through IPUMS (Ruggles et al. 2004).

3. Summary

In sum, exogenous differences in the proportion of children working do not appear to account for city-level differences in evening school provision. Rather, the political economy of evening school provision appears to have hinged more on school boards' responsiveness to plausibly exogenous differences in immigration levels and school overcrowding. Of course, this does not imply that working children did not benefit from the schools. In fact, they may have had much to gain, a possibility that is explored in the next chapter.

Appendix A
Legislation Regarding Evening School Attendance (as of 1906)

California	Compulsory attendance required for age 8-14; Employment prohibited in most occupations for children under age 14; Gainful employment is prohibited for children age 14-16 during school hours/session unless they can demonstrate ability to read and write or they attend evening schools.
Colorado	Compulsory attendance required for age 8-16; Employment prohibited in most occupations for children under age 14; Employment is prohibited for children age 14-16 unless they can demonstrate ability to read and write or they attend part-time school, evening school, or other instruction on a daily basis.
Connecticut	Compulsory attendance required for age 7-16; No child between age 14-16 may be employed unless he has sufficient schooling; If he is unable to read and write, he must produce every school month of 20 days, certificate of teacher to effect that he attended evening school 18 consecutive evenings in a current school month and is a regular attendant, if employed in a town where public evening schools are established.
Delaware	No compulsory attendance law except education requirements of child labor law; Any child between age 14-16, before he may be employed in a factory, etc, must have attended within the 12 months immediately preceding such employment, some public day or night school or well recognized school 5 days or evenings every week during a period of 12 consecutive weeks etc.
Illinois	Compulsory school age 7-14; Children <14 cannot work while the public school is in session; Ages 14-16 who cannot read and write legible sentences cannot be so employed unless he is a regular attendant at a night school in the town or city in which he resides.
Minnesota	Compulsory school age 8-18; Employment of children under 14 prohibited in most occupations and is never allowed during school sessions. No child under 16 who is unable to read and write simple sentences in the English language may be employed, except during vacation of the public school, at any indoor occupation, unless he regularly attends day or evening school or has attended school during past year the required period.
Nebraska	Compulsory school age 7-15; Children are exempt who attend private or parochial school, are taught at home or elsewhere by qualified person, 14 years of age and indigent, physically or mentally incompetent or live 2 miles from school. In case exemption is granted for an indigent child of 14, he may be required to attend public evening or other school for not less than 2 hours each school day during school session.
New Hampshire	No child under 12 may be employed in any manufacturing establishment. No child under 14 may be employed in such establishment nor in any mechanical, mercantile or other employment during time public schools are in session. No child under 16 may be employed in such establishments while school is in session unless in possession of age and schooling certificate. No minor under 16 may be employed in above mentioned establishments unless able to read at sight and write legibly simple sentences in the English language or is in regular attendance at a day or evening school if one is maintained in the district in which he resides.
New York	Boys between 14 and 16 employed in cities of the first and second class who do not hold a certificate of graduation from the public elementary school or a pre-academic Regents certificate are required to attend evening schools for not less than 6 hours each week for a period of not less than 16 weeks in each school or calendar year.
Vermont	Evening school session equivalent to half day session of public school

Source: University of the State of New York, Attendance and Child Accounting Division. 1907. "A summary of the compulsory attendance and child labor laws of the states and territories of the United States, compiled by James D. Sullivan, Chief, Attendance Division, N.Y. State Education Department." Albany, NY: N.Y. State Education Department.

Appendix B
Summary Statistics for City-level Variables

	1870	1880	1900	1910
Evening School=1	0.48	0.52	0.45	0.77
	(0.50)	(0.50)	(0.50)	(0.42)
Percent of adults working in mnfg	17.84	17.13	16.45	23.01
	(11.10)	(9.08)	(9.14)	(11.70)
Percent of adults with professional occupations	1.83	2.22	2.61	2.90
	(1.48)	(1.60)	(1.56)	(2.12)
Percent of adults (ages 18-45) who are foreign-born	40.66	33.31	25.12	26.81
	(16.47)	(14.40)	(16.37)	(17.10)
Adult literacy rate	89.02	91.66	94.62	94.92
	(9.86)	(8.64)	(5.45)	(4.20)
City Size	75,133	109,618	109,248	180,271
	(182,986)	(255,600)	(310,563)	(469,481)
Percent of population that is 65 and over	2.41	2.90	3.66	3.87
	(1.33)	(1.16)	(1.43)	(1.72)
Percent of children (ages 10-17) working	21.87	25.40	21.92	22.92
	(11.71)	(9.13)	(7.69)	(8.82)
Percent of children (ages 10-17) working in mnfg	9.83	10.27	9.14	12.20
	(12.46)	(9.83)	(7.94)	(9.19)
Percent of children (ages 10-17) working in retail	2.76	3.52	3.32	4.56
	(3.02)	(3.01)	(2.60)	(3.76)
Percent of children (ages 10-17) working in domestics	6.21	6.16	3.56	2.30
	(5.64)	(4.11)	(2.83)	(2.79)
Enrollment as a percentage of Available Sittings	-	112.44	104.78	-
	-	(17.33)	(13.64)	-
Observations	81	69	174	135

Notes: Standard deviations are in parentheses. Domestic occupations include domestic service, laundry service, and other personal services. Professional occupations include all professional occupations (such as accountants, doctors, lawyers, clergymen, etc.) except teachers. Individuals were coded as literate if they could both read and write. The percent of children is understated since this only captures children who described an occupation other than school, helping at home, etc. as their principal activity (i.e., where they earned the majority of their money or spent the majority of their time) and thus misses students with part-time jobs or unpaid labor.
Sources: Evening school data and information on sittings/enrollment are taken from United States Bureau of Education. 1871-1911. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O. All other variables are constructed from decennial population census data available through IPUMS (Ruggles et al. 2004).

Appendix C
Evening School Provision, by Census Year

	1870	1880	1900	1910
Akron			X	X
Albany			X	X
Allegheny	X	...	X	
Allentown			X	X
Altoona				X
Atlanta	...		X	X
Atlantic City		...		X
Auburn	X	X		X
Augusta	...			
Baltimore	X	...	X	X
Bay City	X			X
Bayonne	...	...	X	X
Binghamton				X
Boston	X	X	X	X
Bridgeport	...		X	X
Brockton	...		X	X
Buffalo	X	...	X	X
Burlington	X	...	X	
Cambridge	X	...	X	X
Camden				X
Canton		X		
Charleston, MA	X	...	...	...
Charleston, SC				
Chattanooga	...			
Chelsea		...	X	X
Chester	X	...		...
Chicago	X	X	X	X
Cincinnati	X	X	X	X
Cleveland		X	X	X
Columbus	X	...	X	X
Council Bluffs	...			...
Covington		X		X
Dallas	...	...		X
Davenport	X	X		
Dayton		X	X	X
Denver	...		X	X
Des Moines				X
Detroit			X	X
Dubuque				
Duluth	...	...		
Easton	...	...		
Elizabeth	...			X
Elmira		X		X
Erie	X	...	X	X
Evansville		...		
Fall River	X	...	X	X
Fitchburg	...	X	X	X
Fort Wayne				X
Fort Worth	...	...		
Galveston	...	...		
Gloucester	...			X
Grand Rapids		X		X
Hannibal	X			
Harrisburg	X	...		X
Hartford	X		X	X
Haverhill		X	...	X
Hoboken	X	...	X	X
Holyoke	...	X	X	X
Houston	...			X
Indianapolis	X	...	X	X
Jackson		...		
Jacksonville	...			...
Jersey City	X	X	X	X
Johnstown	...	...		
Joliet				X
Joplin	...	...		
Kansas City				X
Knoxville	...			
La Crosse	...			
LaFayette		...		
Lancaster	X	...	X	X
Lawrence, KS	...	X		
Lawrence, MA	X	...	X	X
Lexington	...			
Lincoln	...	...	X	...
Little Rock	X		X	
Los Angeles	...			X
Louisville			X	X
Lowell	X	X	X	X
Lynn	X	X	X	X
Madison	X		...	...
Malden	...	X	X	X
Manchester	X	X	X	X
McKeesport	...	...	X	
Memphis			X	X
Meriden	...		X	X
Milwaukee	...			X
Minneapolis				X
Mobile				...
Montgomery	...	...		X
Nashua	X	X		
Nashville			X	X
New Bedford	X	...	X	X
New Britain	...		X	X
New Haven	X	X	X	X
New Orleans				X
New York	X	X	X	X
Newark	X	...	X	X
Newburgh	X	X		
Newburyport	X	...	X	X
Newcastle	...			X
Newport, KY			X	
Newport, RI	X	X	X	X
Newton	...		X	X
Norfolk				...
Norwich	X	X		
Oakland		X	X	X
Omaha	...		X	X
Oshkosh			X	X
Oswego	X	X		X
Passaic	...	...	X	X
Paterson	X	X	X	X

Appendix C (cont'd.)

	1870	1880	1900	1910
Pawtucket	...	...	X	X
Peoria		X	X	X
Philadelphia		X	X	X
Pittsburg	X	X		X
Portland, ME		X	...	X
Portland, OR			X	X
Providence	X	...	X	X
Quincy			X	
Racine	...			X
Reading			X	X
Richmond				X
Rochester			X	X
Rockford			X	X
Sacramento		X	X	X
Saginaw	...			X
Salem	X	X	X	X
Salt Lake City	...	...		
San Antonio	...			X
San Francisco	X	X	X	X
Savannah		...		X
Schenectady				X
Scranton	...	X	...	X
Seattle	...	...		X
Somerville	...		X	X
South Bend	X		...	X
South Omaha	...	...	X	...
Spokane	...	...		X
Springfield, IL		...		X
Springfield, MA	X	X	X	X
Springfield, OH				
St. Joseph			X	
St. Louis	X	X	X	X
St. Paul				
Superior	...	...		X
Syracuse		X	X	X
Tacoma	...	...		
Taunton	X	X	X	X
Terre Haute				
Toledo	X	...	X	X
Topeka	...			
Trenton	X	X		X
Troy				X
Utica	X	X	X	X
Washington		...		X
Waterbury	...	...	X	X
Wheeling		...		
Wilkesbarre	...	...	X	X
Williamsport				X
Wilmington	X	X		X
Woonsocket	...		X	X
Worcester	X	X	X	X
Yonkers	...	...	X	X
York				
Youngstown	...	...		

Notes: Xs indicate the city maintained evening schools during the year; Blanks indicate the city did not have evening schools; Ellipses indicate missing observations.
Source: United States Bureau of Education. 1871-1911. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

CHAPTER IV

EVENING SCHOOLS AND EDUCATIONAL OUTCOMES IN THE UNITED STATES, 1870-1910

Cities established evening school programs primarily with out-of-school youths in mind, and the raw evening school enrollment figures suggest that, especially in industrial cities, many youths took advantage of these educational opportunities. Essentially, evening schools offered a low opportunity cost schooling option relative to day schools because students could continue working and earning wages.[55] The high incidence of child labor, the low average daily attendance in day schools, and the exasperation expressed by truancy officers during this period, suggest that opportunity costs of attendance were important for youths' decisions to enroll in any type of school and to attend regularly if enrolled.[56]

Of course, it is unlikely that every evening school enrollee was a net addition to the city's public school rolls. There is evidence, for example, that evening schools also attracted students who had enrolled in the day schools at some point during the school year, but found themselves unable to attend regularly due to work obligations and family responsibilities. In 1849, for example, a New York City principal in charge of both day and evening schools stated that some parents "removed their children, who were irregular in their attendance at [the] day school and presented them …for admission into the Evening School, as among those whose occupations

[55] Even though parents could (and sometimes did) allow children to attend day school and work at night, employment opportunities were much more plentiful during the daytime. States also began restricting (or completely banning) night work for younger teens during the latter part of the nineteenth century.

[56] Statistics from Jersey City in 1869 illustrate this point well. Approximately 7000 children (58 percent of the school-age population) enrolled in the public schools at some point during the school year. But, since many of the students were struck from the rolls for a lack of regular attendance (or failure to report to classes at all), the average number of students registered throughout the year was only 3835 and average daily attendance was even lower (2923 pupils) (U.S. Bureau of Education 1870, 222).

prevented their attendance at day school" (New York Board of Education 1849, 22).[57]

Moreover, since evening school access lowered the opportunity cost of working as well as the opportunity cost of attending school, some day school students may have entered the labor force when evening schools were made available.[58] In such cases, evening school attendance was a substitute for day school attendance and the total number of students enrolled in the public schools that year would not change.[59]

Access to evening schools should have improved (or at least not worsened) literacy outcomes for youths whose next best alternative to evening school attendance was full-time work or idleness. Evening schools may (or may not) have been a better fit for students that would have otherwise enrolled in day schools. Consequently, the overall effects of the schools on educational outcomes such as literacy, numeracy, and educational attainment are ambiguous and depend on the productivity of time spent in evening school and the extent to which evening schools "crowded out" day school enrollment.

This chapter uses large samples of census data to examine the overall effect that evening school access had on literacy and school enrollment. I then use these individual level data, along with a newly-constructed city-level panel dataset, to consider the potential for evening schools to have unintended consequences of drawing students into the labor market and/or out of the day schools.

[57] In the case of Jersey City (in 1869), for instance, approximately 16 percent of the evening school students had enrolled in day schools, as well, at some point during the school year (U.S. Bureau of Education 1870, 222).
[58] Chapter III provides anecdotal and empirical evidence that is consistent with this possibility.
[59] Along these lines, economists and historians have found that the expansion of common schools during the nineteenth century entailed significant enrollment shifts from private schools to lower-cost public schools (e.g., Fishlow 1966, Kaestle and Vinovskis 1980). Similar forces may have been operating in the expansion of evening schools.

1. Literacy

Access to evening schools may have affected literacy outcomes through both the extensive margin of learning (i.e., enrollment and persistence) and the intensive margin (i.e., regularity of attendance and productivity of evening instruction). When evening schools were made available in a city, youths who had previously dropped out and who had no prior schooling, took advantage of these schooling alternatives. Also, during the second half of the nineteenth century, a number of states enacted legislation that required illiterate working youths to attend evening school even after satisfying the compulsory attendance requirements.[60] The lower opportunity cost of evening school attendance, as well as these laws, may have led students to enroll or remain in school longer than they otherwise would have persisted in the day school.

In addition to increasing enrollment and persistence for youths who would otherwise have not attended school, the schools may have been a better fit for youths who would have enrolled in the day schools had evening schools not been available. This would be true, for example, for youths who would not be able to attend the day classes regularly. Also, since elementary evening schools pared down their standard curricula to emphasize only the essential parts of day school curriculum (fundamentals of reading, writing, and arithmetic), students with work or household responsibilities may have had an easier time keeping up with class work in the more narrowly-focused evening school courses. In either scenario, evening school enrollment would have been more productive for working children than enrollment in traditional day schools.

Indeed, evening school teachers, principals, and state superintendents, describe the literacy gains of evening school students with great satisfaction (U.S. Bureau of Education 1870-

[60] See Appendix A in the preceding chapter.

1914). New York City evening school reports from 1847 illustrate this point well. Although 69 percent of students in one female school could not read at the beginning of term, almost all of them could read "reasonably well" (or better) at the level of *Cobb's Second Reader* by the end of term.[61] In the same year, the schools for males showed a much lower incidence of illiteracy among incoming students (usually ranging from about 9 to 11 percent), but most of these boys could also read with "tolerable ease" by the time the term ended (New York Board of Education 1849, 24).

Although anecdotes like this are scattered throughout the state and federal education reports and most educators recognized the potential benefits of evening schools, some teachers and principals questioned whether the schools actually improved educational outcomes for a substantial proportion of students who enrolled. For example, a city school superintendent in Maine reports, "Notwithstanding the excellent advantages that are offered to the pupils in the evening schools, only a small proportion of (those)…enrolled derived any benefit from their attendance" (U.S. Bureau of Education 1887, 255). He goes on to explain that irregular attendance was primarily responsible for this lack of success. Moreover, if evening schools were less productive (due to lower quality instruction or challenges associated with evening instruction), the diversion of students from the day schools might have worsened literacy outcomes.[62]

[61] Twenty-nine percent of students in the other female school that reported progress could not read at the beginning of term, and the students made similar gains by the end of the year. For both sexes, the gains in arithmetic were even more striking. Approximately 85 percent of incoming female students and – depending on the school being considered – between 25 and 65 percent of male students were unfamiliar with even the basic rules of arithmetic. The vast majority of students understood the simple rules by the close of term; many progressed through compound rules, reduction, and fractions; a smaller number had advanced through multiplication and division (New York Board of Education 1849).

[62] As discussed in Chapter II, perceptions of low quality instruction were based on the fact that evening schools were often forced to utilize teachers who were either tired after teaching in the day schools or who were hard pressed to secure employment in the day schools. The exhaustion of evening school students (attempting to learn after a full

1.1 Data and Econometric Framework

To examine econometrically whether access to evening schools did have a measurable impact on literacy, I use individual-level census data from 1870 to 1910 to estimate the following equation for literacy:

$$\Pr(Literate_{i,c,t} = 1 \mid \gamma_t, \xi_c, x_{i,c,t}, NS_{c,t}) = \Phi(\alpha + \gamma_t + \xi_c + \beta x_{i,c,t} + \eta(NS_{c,t} = 1)) \quad (1)$$

where $Literate_{i,c,t}$ =1 if the youth was able to read and write, $NS_{c,t}$ =1 if at least one evening school was available in the youth's city of residence at time t, and $x_{i,c,t}$ includes household characteristics (race, nativity and literacy of household head, number of siblings, and an indicator for having either parent absent) and the length of the day school term. This specification includes city and year fixed effects and, therefore, is identifying the coefficient of interest from openings and closings of evening school programs within cities between 1870 and 1910. If we assume that openings and closings of evening schools are exogenous with respect to literacy outcomes, given the controls described above, the coefficient measures the effect of exposure to evening schools on the probability of a youth being literate.[63]

1.2 Results

Table 8 presents the estimates for the entire sample and for subsets of those individuals deemed most likely to enroll in evening schools: working youths and the children of immigrants. The results for the entire sample of youths (ages 12 to 18) are given in Panel A. The literacy of the head of household is strongly positively related to the child's likelihood of being literate,

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day at work), students' irregular attendance, and the compressed instructional time are a few of the other main challenges associated with evening school instruction.

[63] We might doubt this assumption if, for example, returns to education are greater in cities with more "white collar" employment opportunities and – as the evidence in Chapter III suggests – evening schools are less likely to be provided in these cities. However, if this is the case, the coefficient on evening school availability should be biased downward and would be a conservative estimate of the true impact of evening school availability on literacy.

Table 8
Literacy of Youths (Ages 12-18): 1870-1910

A. Whole Sample

	All		Not Working		Working	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	0.015**	0.009*	0.007	0.001	0.044*	0.022**
	(0.005)	(0.004)	(0.005)	(0.005)	(0.018)	(0.007)
Black=1	- 0.053**	- 0.046**	- 0.040**	- 0.039**	- 0.074**	- 0.066**
	(0.010)	(0.011)	(0.009)	(0.009)	(0.022)	(0.020)
HOH Literate=1	0.093**	0.095**	0.087**	0.071**	0.121**	0.131**
	(0.006)	(0.008)	(0.008)	(0.009)	(0.010)	(0.010)
Absent Parent=1	- 0.022**	- 0.015**	- 0.013**	- 0.007**	- 0.038**	- 0.023**
	(0.002)	(0.002)	(0.002)	(0.003)	(0.006)	(0.004)
School Term	0.013	0.003	- 0.001	0.003	0.062**	0.008
	(0.009)	(0.007)	(0.009)	(0.009)	(0.022)	(0.014)
HOH Immig=1	- 0.020**	- 0.015**	- 0.015**	- 0.013**	- 0.032**	- 0.019**
	(0.003)	(0.002)	(0.003)	(0.003)	(0.006)	(0.003)
Observations	34297	32113	21817	15202	9959	13983

B. Children of Immigrants

	All		Not Working		Working	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	0.024**	0.005	0.013	- 0.005	0.066*	0.020
	(0.009)	(0.006)	(0.092)	(0.007)	(0.026)	(0.014)
HOH Literate=1	0.117**	0.106**	0.113**	0.081**	0.141**	0.141**
	(0.007)	(0.008)	(0.009)	(0.012)	(0.012)	(0.011)
Absent Parent=1	- 0.032**	- 0.025**	- 0.017**	- 0.013*	- 0.051**	- 0.036**
	(0.004)	(0.003)	(0.004)	(0.005)	(0.007)	(0.005)
School Term	0.020	- 0.010	0.002	- 0.008	0.080**	- 0.006
	(0.016)	(0.013)	(0.019)	(0.016)	(0.029)	(0.028)
Observations	17379	17020	10414	7384	5948	7987

C. Results by Time Period (Reporting Coefficients on the Evening School Indicator)

	Working		Immigrants	
	Girls	Boys	Girls	Boys
1870 and 1880	0.085	0.047*	0.038	0.051*
	(0.052)	(0.021)	(0.021)	(0.024)
1900 and 1910	0.035	0.009	0.059	- 0.001
	(0.025)	(0.011)	(0.036)	(0.007)

Notes: Coefficients shown are from probit estimation and are reported as average partial effects. Regressions include city and year fixed effects. The night school indicator is equal to one if the city of residence operated evening schools that year. The household head is considered literate if he/she can read and write, and immigrant status is based on his/her place of birth. School Term is number of days taught, divided by 50. Robust standard errors, clustered at the city level, are shown in parentheses; * significant at 5% level; ** significant at 1% level.
Sources: IPUMS (Ruggles et al. 2004) and United States Bureau of Education. 1871-1911. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

while other household variables are negatively related to literacy. Having (potential) access to an evening school is associated with a small increase in literacy (about 1.5 percentage points for girls and 1 percentage point for boys) in the whole sample (columns 1-2). Breaking the sample into children that did and did not report an occupation in the census (columns 3-6) suggests that the evening schools had measurable impacts only on the former. In particular, the evening school indicator is associated with a 4.4 percentage point increase in literacy for working girls and a 2.2 percentage point increase for working boys, while the coefficients are not statistically different from zero for youths without an occupation. Similar results hold for the sub-sample of individuals with foreign parentage (Panel B), but the night school coefficient is only statistically significant for girls in these regressions. As Panel C illustrates, exposure to evening schools was associated with higher probabilities of boys being literate only in the early part of the period. For girls, we continue to observe a positive relationship between evening school availability and literacy (that is even larger in the case of immigrants) in the later period, although the estimates are not statistically significant at customary levels. In all cases, estimates for the sub-sample of observations in 1870 and 1880 are two or three times as large as estimates for the full sample.[64]

To put the results in context, one can use the point estimates to examine how literacy rates for working children and children of immigrants would change if evening schools had been available in every city in the sample. In this counterfactual experiment, almost the entire gap in literacy rates between these groups and those who reported no occupation other than "student" and whose parents were both native born disappears.

[64] The appendix tabulates the literacy rates for the sample, broken down by year, gender, work status, and immigrant status.

2. School Enrollment and Youth Employment

If access to evening schools is driving the observed correlation between evening school availability and literacy, one would expect this to work in part through increasing school enrollment. The narrow and inconsistent nature of census questions on school enrollment and work limits the possibilities to examine this relationship for the entire period of interest. In particular, the question regarding school enrollment excluded night school attendance in the 1870 and 1880 instructions. Although the 1900 census did not specifically exclude night school attendance, enumerators asked about attendance only of "school age persons" and would have likely missed older teens working full time during the day and attending school in the evening. Also, enumerators only counted individuals as having an occupation if they spent the greater part of their time at work and would have missed youths working part time and attending school. This resulted in an implausibly low count of individuals attending school and working simultaneously (as youths in evening school would have done) in 1900. Consequently, it is only possible to examine the effect of evening school access on *any* school enrollment for the 1910 cross section.

The change in enumerator instructions over time, however, also provides a falsification check of sorts and a first look at the potential for evening schools to have "crowded out" day school enrollment. In particular, since evening school enrollment would not have been counted as school attendance by census enumerators in 1870 or 1880 (for sure) or in 1910 (apparently), all of the recorded school enrollment should be for the day schools. Since, in theory, providing access to evening schools should not increase *day* school enrollment, a strong positive relationship between evening school access and *day* school enrollment would suggest that the estimates fail to capture the causal relationship described in equation (1). On the other hand, a

strong negative relationship between evening school access and *day* school enrollment would indicate that evening schools did draw some students who would have at least enrolled in the day schools had evening schools not been available. To examine these possibilities, I also estimate the school attendance equation for census years 1870 to 1900.[65]

2.1 Data and Econometric Framework

To examine whether access to evening schools had a measurable impact on *any* school enrollment in 1910, I again make use of individual-level census data to estimate a probit equation for school enrollment of youths (ages 12 to 18). The specification is similar to equation (1) but replaces school attendance as the outcome of interest and replaces the city and year fixed effects with dummies for state of residence. Like the literacy model, it also includes household characteristics (race, immigrant status, and an indicator for having either parent absent from the household), and characteristics of the school system (availability of an evening school and the length of the school year).

2.2 Results

Table 9 presents the results from this analysis. Consistent with the evidence in the preceding section, the indicator for availability of evening schools is positively related to the probability of enrolling in schools only for immigrant boys that reported an occupation in the census and for working girls (with larger estimates for immigrants). Specifically, working girls in the full sample were 4.8 percentage points (and immigrant girls who were working were 6.8 percentage points) more likely to be enrolled in school when they had access to evening schools.

[65] Using the 1870 and 1880 samples only renders results that are qualitatively similar to the results presented here for 1870-1900.

Table 9
School Enrollment of Youths, Ages 12-18 (1910)

A. Whole Sample

	All		Not Working		Working	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	0.007	- 0.009	0.002	0.000	0.048**	0.005
	(0.015)	(0.014)	(0.014)	(0.010)	(0.017)	(0.018)
Black=1	- 0.024	- 0.059**	- 0.026	- 0.027	0.041	- 0.045*
	(0.018)	(0.021)	(0.015)	(0.016)	(0.037)	(0.026)
HOH Literate=1	0.096**	0.077**	0.079**	0.068**	0.009	0.009
	(0.013)	(0.013)	(0.013)	(0.007)	(0.015)	(0.017)
Absent Parent=1	- 0.102**	- 0.086**	- 0.050**	- 0.019**	- 0.029**	- 0.036**
	(0.008)	(0.006)	(0.007)	(0.006)	(0.009)	(0.011)
School Term	- 0.144**	- 0.031	- 0.073*	- 0.024	- 0.134**	- 0.024
	(0.041)	(0.042)	(0.033)	(0.019)	(0.049)	(0.051)
HOH Immig=1	- 0.081**	- 0.050**	- 0.044**	- 0.007	- 0.016	- 0.013
	(0.008)	(0.008)	(0.006)	(0.004)	(0.012)	(0.009)
N(sibs)	- 0.009**	- 0.011**	- 0.005**	- 0.001	- 0.001	- 0.005*
	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)
Observations	17479	16549	11851	9286	5628	7168

B. Children of Immigrants

	All		Not Working		Working	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	0.040	0.028	0.004	0.013	0.068**	0.055*
	(0.021)	(0.023)	(0.023)	(0.017)	(0.019)	(0.027)
HOH Literate=1	0.093**	0.074**	0.090**	0.068**	0.004	0.014
	(0.012)	(0.014)	(0.016)	(0.008)	(0.016)	(0.020)
Absent Parent=1	- 0.077**	- 0.072**	- 0.048**	- 0.029**	- 0.023	- 0.040**
	(0.009)	(0.009)	(0.009)	(0.008)	(0.014)	(0.013)
School Term	- 0.146**	- 0.024	- 0.089*	- 0.023	- 0.128*	- 0.021
	(0.053)	(0.063)	(0.045)	(0.039)	(0.062)	(0.075)
N(sibs)	- 0.003	- 0.008**	- 0.002	0.002	0.001	- 0.007*
	(0.002)	(0.003)	(0.002)	(0.001)	(0.003)	(0.003)
Observations	8625	8410	5339	4291	3213	3952

Notes: Coefficients shown are from probit estimation and are reported as average partial effects. Age dummies are included, and the specifications also include state fixed effects. Robust standard errors, clustered at the city level, are shown in parentheses; * significant at 5% level; ** significant at 1% level. The night school indicator is equal to one if the city of residence operated evening schools that year. School attendance measures whether the respondent attended "any school, college, or educational institution" in 1910. The attendance reference period is the previous 7.5 months. The question regarding school enrollment excludes night school attendance in the 1870 and 1880 instructions. Although the 1900 census did not specifically exclude night school attendance, enumerators asked about attendance only of "school age persons" and only counted individuals as having an occupation if they spent the majority of their time at work. This resulted in an implausibly low count of individuals attending school and working simultaneously (as youths in evening school would have done) in 1900. Thus, I use the data for 1910 only. The household head is considered literate if he/she can read and write, and immigrant status is based on his/her place of birth. School Term is the number of days taught (divided by 50).
Sources: IPUMS (Ruggles et al. 2004); Night School information and the length of school year are from United States Bureau of Education. 1911. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

The results for 1870 to 1900 are presented in table 10. As mentioned above, the school outcome in this analysis is effectively *day* school enrollment. During this period, access to evening school is positively associated with day school enrollment for youths (especially males) who were not working (Panel A). Breaking the sample up by nativity of the head of household, we see that this positive association is driven primarily by youths with immigrant household heads (Panels B and C). This result suggests caution when interpreting the literacy results in the preceding section. In particular, it may be the case that an omitted variable, which is correlated with the availability of evening schools and immigrants' day school attendance, biases the literacy estimates (reported in table 8) upward for immigrant youths who do not report an occupation in the census. It is difficult to imagine characteristics of the public school system that would fit this description, but not influence native-born youths' day school attendance at the same time. Parochial schools, however, flourished in cities with substantial immigrant populations and it is possible that access to (day) parochial schools and evening public schools are correlated. Consequently, the estimates in table 8 for immigrant youths who are not working might be biased upward.

Interestingly, for working girls with native-born heads of household, the availability of evening schools is negatively associated with day school enrollment. This is consistent with a "crowding out" effect of evening schools for this group. Specifically, the result suggests that some female day school students may have entered the labor market and (possibly) enrolled in evening schools when the schools became available. To further examine this possibility, I estimate equations for work directly and find that – consistent with the crowding out hypothesis – girls with native-born household heads were 2.6 percentage points more likely to work when evening schools became available in their city of residence (see table 11).

Table 10
School Enrollment of Youths, Ages 12-18 (1870-1900)

A. Whole Sample

	All		Not Working		Working	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	0.002	0.010	0.022	0.036*	- 0.008	- 0.004
	(0.013)	(0.014)	(0.014)	(0.018)	(0.008)	(0.009)
Observations	21824	20096	15398	10699	3945	6961

B. Children of Immigrant Parents

	All		Not Working		Working	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	0.014	0.011	0.039	0.036	0.007	- 0.018
	(0.017)	(0.018)	(0.024)	(0.025)	(0.014)	(0.010)
Observations	11593	11249	7748	5467	2376	3908

C. Children of Native-Born Parents

	All		Not Working		Working	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	- 0.011	- 0.005	0.008	0.022	- 0.046**	- 0.003
	(0.018)	(0.019)	(0.019)	(0.022)	(0.012)	(0.014)
Observations	10168	8799	7497	4906	1208	2155

Notes: Coefficients shown are from probit estimation and are reported as average partial effects. The specifications also include age dummies, indicators for the literacy of the household head and whether either parent was absent, length of school term, number of siblings, and city fixed effects. Specifications in Panel A (C) also include indicators for whether the head of household is an immigrant (black) Robust standard errors, clustered at the city level, are shown in parentheses; * significant at 5% level; ** significant at 1% level. The night school indicator is equal to one if the city of residence operated evening schools that year. The census question regarding school enrollment excludes night school attendance in the 1870 and 1880 instructions. Although the 1900 census did not specifically exclude night school attendance, enumerators asked about attendance only of "school age persons" and only counted individuals as having an occupation if they spent the majority of their time at work. This resulted in an implausibly low count of individuals attending school and working simultaneously (as youths in evening school would have done) in 1900. Omitting 1900 does not change the qualitative results. The household head is considered literate if he/she can read and write, and immigrant status is based on his/her place of birth. School Term is the number of days taught (divided by 50).
Sources: IPUMS (Ruggles et al. 2004); Night School information and the length of school year are from United States Bureau of Education. 1871-1901. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

Table 11
Employment of Youths, Ages 12-18 (1870-1910)

	All		Immigrant Parents		Native-born Parents	
	Girls	Boys	Girls	Boys	Girls	Boys
Night School=1	0.025**	0.015	0.020	0.010	0.026*	0.017
	(0.009)	(0.011)	(0.014)	(0.014)	(0.013)	(0.013)
Black=1	0.056**	0.053**	-	-	0.028	0.039*
	(0.018)	(0.015)	-	-	(0.015)	(0.017)
HOH Literate=1	- 0.088**	- 0.073**	- 0.091**	- 0.066**	- 0.077**	- 0.087**
	(0.008)	(0.007)	(0.009)	(0.007)	(0.016)	(0.017)
Absent Parent=1	0.127**	0.096**	0.083**	0.072**	0.168**	0.121**
	(0.011)	(0.006)	(0.009)	(0.005)	(0.011)	(0.007)
School Term	0.031	- 0.031	0.094**	- 0.061	- 0.023	0.006
	(0.029)	(0.028)	(0.035)	(0.035)	(0.039)	(0.034)
HOH Immig=1	0.082**	0.068**	-	-	-	-
	(0.005)	(0.007)	-	-	-	-
N(sibs)	0.006**	0.009**	0.003	0.005**	0.008**	0.014**
	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
Observations	39306	36658	20214	19699	19018	16947

Notes: Coefficients shown are from probit estimation and are reported as average partial effects. Age dummies are included, and the specifications also include city fixed effects. Robust standard errors, clustered at the city level, are shown in parentheses; * significant at 5% level; ** significant at 1% level. The night school indicator is equal to one if the city of residence operated evening schools that year. Employment is an indicator for whether the youth reported a gainful occupation, so is actually closer to "regular" or "full-time" employment. The household head is considered literate if he/she can read and write, and immigrant status is based on his/her place of birth. School Term is the number of days taught (divided by 50).
Sources: IPUMS (Ruggles et al. 2004); Night School information and the length of school year are from United States Bureau of Education. 1871-1901. *Annual report of the U.S. Commissioner of Education*. Washington: G.P.O.

3. City-level Enrollment Rates

The evidence in the preceding section is consistent with evening schools crowding out day school enrollment only for the working girls with native-born parents. It is possible, however, that the potential for evening schools to draw youths out of the day schools varied from state to state. This might be the case, for example if legislation regarding children's work and schooling (or resources for enforcing these laws) varied by state. The "average treatment effects" reported in tables 10 and 11 would obscure this heterogeneity of treatment effects.

3.1 Data and Econometric Framework

To explore this question empirically, I again make use of information on evening schools included in the *Annual Reports of U.S. Commissioner of Education*. Using the reports, I have constructed a panel data set for 79 cities in New York, New Jersey, and Massachusetts spanning the twenty year period from 1873-1892. These states provide an excellent case study since both child labor and evening schools were especially common there. For example, 63 of the 147 cities operating evening schools (and 52 percent of the students attending the schools) were located in New York, New Jersey, and Massachusetts in 1888 (U.S. Bureau of Education 1888, 224).

The data set contains indicators for whether a city operated evening schools in a given year, as well as the size of the school-age population, total enrollment in day and evening schools, the sittings available for study in the public schools, and the total receipts available for use by the city school system. Because school statistics are unavailable for some cities in each year, the panel is unbalanced and cities are observed an average of 13 times in the dataset.

Since the question of interest is whether the existence of night schools increased the overall proportion of children enrolled in school (at all during the year) or merely shifted the enrollment away from day school, I use these data to estimate separate models of the overall enrollment rate in public schools (including day and evening school enrollment) and the enrollment rate in public day schools only. Specifically, I model the city-level school enrollment rate as follows:

$$EnrRate_{c,t} = \alpha + \gamma_t + \xi_c + \beta x_{c,t} + \delta(NS_{c,t} = 1) + \varepsilon_{c,t} \qquad (2)$$

where in the first specification $EnrRate_{c,t}$ is the percentage of the school age population (in city c, in year t= [1873,…, 1893]) enrolled in any public school. I then re-estimate the model with

$EnrRate_{c,t}$ equal to the percentage of the school age population enrolled in public day schools. If evening school students are drawn entirely from youths that would not have otherwise attended (or who enrolled in both evening and day schools during the year), opening an evening school in the city ($NS_{c,t}$ =1) should have a positive effect on overall enrollment and no negative effect on public day schools (i.e., $\hat{\delta}$ should be positive in the model of overall public school enrollment and approximately zero in the model of day school enrollment). The model is estimated separately for each state, and each specification includes the school system's receipts per student ($x_{c,t}$), to control for the commitment of resources to public education. Since the overall enrollment rate may be influenced by unobservable time and location-specific factors, I include city and year fixed effects (ξ_c and γ_t). Therefore, identification of the evening school effect depends on changes in evening school provision within cities, over time.

3.2 Results

The results are presented in table 12. The existence of a night school is associated with an increase in overall enrollment of about 2 percentage points for New Jersey (although the coefficient is not statistically significant at conventional levels) and 4.6 percentage points for Massachusetts.[66] In the case of New York, however, there is no apparent increase to overall enrollment rates when an evening school was opened. This suggests that a substantial portion of evening school students in New York were drawn from the group of students who would have (at least) enrolled in day schools if evening schools were unavailable. To further test whether students were shifting enrollment away from day schools to attend evening classes, I estimate the

[66] There is no way to determine how much of this increase represented out-of-school youths entering the school system to attend evening schools and how much of the increase represented double counting youths who attended both day and evening schools when the latter were available.

Table 12
City-level Enrollment Rates for New York, New Jersey, and Massachusetts (1873-1892)

	All Public Schools			Public Day Schools		
	NY	NJ	MA	NY	NJ	MA
Night School==1	- 0.241	2.390	4.587	-3.328	-3.132	-2.754
	(0.994)	(1.589)	(1.831)**	(0.934)**	(1.648)	(1.932)
Receipts per student	1.096	0.188	0.697	1.063	0.158	0.725
	(0.232)**	(0.102)	(0.246)**	(0.222)**	(0.095)	(0.241)**
R-squared	0.80	0.75	0.60	0.82	0.71	0.67
Observations	367	158	373	367	158	373

Notes: The night school indicator is equal to one if the city of residence operated evening schools that year. The sample includes 79 cities (30, 16, and 33 cities in New York, New Jersey, and Massachusetts, respectively) that reported school statistics in the *Annual Reports of the U.S. Commissioner of Education* for at least two years. The cities are observed an average of 13 times. No data are available for 1891. Ninety percent of the observations have a population of 10,000 or more and 46 percent of the observations report operating an evening school. The receipts available for use in the school systems are net of loans and cash on hand from the previous year. Since the age range of the school age population (the denominator of the dependent variable) differs in the three states the model is estimated separately for each state. The school age range is 4-21, 6-18, and 5-15 for New York, New Jersey, and Massachusetts. All regressions include city and year fixed effects. Robust standard errors are shown in parentheses; ** significant at 1% level.
Source: U.S. Annual Report of the Commissioner of Education

same model using the proportion of children enrolled in day schools as the dependent variable (4^{th}, 5^{th}, and 6^{th} columns). In each state, the coefficient on evening schools is negative and, in the case of New York, statistically significant. These results are consistent with a substantial "crowding out" effect of evening schools in New York and, perhaps, New Jersey, but the substitution of evening for day school attendance seems less relevant for cities in Massachusetts.[67]

To some extent, the differences by state may reflect differences in state child labor laws. In Massachusetts, for example, students under age 14 were required to attend 20 weeks of day

[67] Since the consistency of the fixed effects estimator requires that night school provision be "strictly exogenous", if previous day school enrollment rates influence current night school provision or there is state dependence in day school enrollment rates (even after controlling for the unobserved city fixed effect), the estimator may be inconsistent (e.g., see Wooldridge 2002). The qualitative results are unchanged, however, with the inclusion of lagged enrollment rates or the use of lagged evening school indicators. Controlling for overcrowding, which was shown in the previous section to influence evening school provision), estimating the model separately for cities with overly-crowded schools, or including city-specific time trends does not (qualitatively) change the results.

schools regardless of their work status, but could apply for work certificates as long as they fulfilled this schooling requirement. Illiterate youths, however, were not allowed to work even after fulfilling the schooling requirement unless they attended evening schools (with attendance to be certified weekly). In both New York and New Jersey, however, the compulsory schooling and school requirements of child labor laws permitted two weeks of evening school to count as one week of day school attendance. It is reasonable, then, to expect students to substitute evening for day attendance with greater frequency in these two states.

4. Summary

The empirical evidence presented in this chapter suggests that access to evening schools facilitated school attendance and promoted literacy among working youths and the children of immigrants. Moreover, these gains were realized despite some "crowding out" of day school enrollment and the unintended consequences of drawing some day school students into the labor market.

Appendix
Literacy Rates of Youths, Ages 12-18 (1870-1910)

Panel A: Whole Sample

	Working				Not Working			
	1870	1880	1900	1910	1870	1880	1900	1910
Urban Girls	0.89	0.94	0.96	0.96	0.95	0.97	0.98	0.99
Urban Boys	0.94	0.95	0.96	0.98	0.95	0.98	0.99	0.99

Panel B: Children of Immigrants

	Working				Not Working			
	1870	1880	1900	1910	1870	1880	1900	1910
Urban Girls	0.91	0.96	0.96	0.95	0.96	0.98	0.98	0.99
Urban Boys	0.96	0.97	0.96	0.97	0.96	0.98	0.99	0.99

Notes: The youth is considered literate if he/she can read and write in any language. The literacy rates are calculated for the youths included in the literacy regressions described in table 1 (i.e., for whom personal, household, and school system characteristics were available) rather than the entire U.S.
Sources: Calculated using data from IPUMS (Ruggles et al. 2004).

CHAPTER V

EVENING SCHOOL ATTENDANCE OF WORKING CHILDREN IN NEW JERSEY

The annual education reports provide broad characterizations of the students enrolled in evening schools during this period. For example, we know that the children of immigrants and other poor working class children were more likely to attend. These descriptive accounts, however, provide little basis for assessing how individual characteristics (e.g., gender, nationality, occupation, or household composition) influenced the likelihood that a working child would take advantage of opportunities for evening instruction. Fortunately, a unique survey of working children in New Jersey offers further insight. Because the federal Census of Population recorded school attendance *without* distinguishing between day and evening schools (except in years when enumerators were specifically instructed *not* to count evening school attendance), this survey of working children is especially valuable.[68] After providing some contextual information regarding child labor and compulsory schooling legislation in New Jersey, this chapter makes use of the survey data to characterize the factors influencing working youths' decisions about attending evening school. I then use the data to examine the impact of evening school attendance on working youths' literacy, numeracy, and educational attainment.

1. New Jersey Background

As early as 1816, New Jersey legislation required factory owners to provide at least one hour per day of instruction in reading, writing, and arithmetic to the children they employed

[68] Moreover, since both child labor and evening schools were prevalent in New Jersey, this state provides an excellent context to examine the evening school attendance of working children.

(Field 1910, 395). As the factory system became more pervasive and employed growing numbers of children, reformers made even greater efforts to secure some exposure to education for working children.[69] In 1851, legislators set limits on the hours of employment for children and reaffirmed that factories were to be responsible for seeing that child workers received some type of education. This law, however, was loosely worded, included numerous exceptions, and made no provisions for enforcement (Field 1910). After New Jersey designated all public schools free in 1871, thus weakening parents' most common argument for keeping children out of school, school officials successfully pressed for a compulsory education law. The resulting act of 1874 required all children ages 8 to13 to attend either a public or private school for at least 12 weeks per year, 6 of which had to be consecutive (Field 1910, 402). At the end of the 1870s, wage earners who were becoming increasingly organized strengthened their demands for stricter child employment policies. After several years of intense lobbying by these labor leaders, legislators passed a stronger compulsory education law in 1883.

Proponents of the law recognized the practical difficulties posed to employers, teachers, and parents in requiring youths to attend school during the day. These included opposition from employers, who faced potential disruptions to their work force and the organization of operations. Teachers also confronted difficulties, since working children who might attend day school only long enough to satisfy the law's requirements would likely fall behind the rest of their class and require special attention in the classroom. Recognizing that these students would only attend for a short period of time, teachers were hesitant to restructure the entire class to suit their needs. Maintaining discipline in the classroom represented yet another challenge, as "children come from their period of work with an increased spirit of 'freshness' and independence which aggravates the task of keeping them in line during their unwilling

[69] For example, in Paterson in 1845, an estimated 42% of employees were under age 16 (Field 1910, 396).

attendance" (Field 1910, 428). Finally, a great deal of survey data from this period (e.g., see Field 1910; New Jersey Inspector of Factories and Workshops 1883-5) reveals that many children who left school early to work, were permitted to do so because of their distaste (or ineptitude) for schoolwork. Taking all of these concerns into considerations, legislators specifically made allowance for the required attendance to be satisfied by night school instruction (Field 1910, 428).

As legislators expected, for many working children, evening school proved to be a more viable alternative for complying with the law. For a sample of 29 New Jersey cities over the period 1885-1904, public evening school enrollment accounted for approximately 5 to 10 percent of total public school enrollment.[70] In heavily industrial cities, however, the percentage was often much greater. In 1900, for example, in Harrison 24 percent of students were enrolled in evening schools, and in Passaic 17 percent of enrollment was accounted for in the evening schools (New Jersey Board of Education 1900).

2. Educational Outcomes of Working Youths in New Jersey

2.1 Data

To investigate progressive reformers' claims regarding harsh working conditions, a number of state labor departments administered surveys to individuals working in various industries around the turn of the century. In many cases, the original survey responses were preserved and were eventually coded into electronic format as part of the Historical Labor Statistics Project (Carter et al. 1991). The State of New Jersey administered one such survey in

[70] These city-based measures exclude the cities in New Jersey that opened public schools for only a few of the years during this period.

1903. Specifically, enumerators surveyed 943 working children, collecting information about wages, working conditions (e.g., hours worked and lunch breaks), and personal and household characteristics (including nationality, occupation of father, etc.).[71] This survey also included detailed questions on the amount and type of schooling, ability to read, write, and do math, and – specifically – included retrospective questions on night school attendance.

Summary statistics for the sample are presented in table 13. The survey included nearly equal numbers of boys and girls. The children were concentrated primarily in the silk, flax, glass, tobacco, and pencil industries, but reported employment in over 200 different occupations. Approximately one-half of the youths reported having at least one parent born outside the U.S. (most frequently from Germany, Ireland, Italy, England, and Poland).

Agents administering the survey were instructed to go into the "principal factory towns of the state…[and] find families having children at work in the local mills or factories" (Carter et al. 1993). Despite the simple survey design, the sample is fairly representative of working youths (ages 12 to 18) in New Jersey in terms of both mean age and immigrant parentage. However, there is a larger proportion of girls in the sample (48 percent) than was true of working youths in the state of New Jersey in the 1910 census data (42 percent) and the distribution of respondents across industries was not representative of working youths in New Jersey (IPUMS). In particular, since approximately one-half of the respondents resided in Paterson or Newark and a non-trivial proportion (18 percent) resided in Glassboro, Bridgeton, Millville, and Vineland), the respondents were drawn disproportionately from the silk, flax, tobacco, and glass industries, which were concentrated in these cities. Also, as we might expect given the instructions to survey administrators, children working in retail or service-related

[71] Although the data were compiled and coded into electronic format initially in 1991and revised in 1993, they have not been used in research on child labor or education. This data set was used for illustrative purposes in two papers describing semi-parametric econometric techniques (i.e., Poirier and Tobias 2003; Smith 2004).

Table 13
Summary Statistics of 943 Working Children in New Jersey (1903)

	Mean/Proportion	Range
Age	15.50	12.00 – 19.00
Male=1	0.52	-
Either Parent Foreign-Born=1	0.50	-
Austrian Parent(s)=1	0.01	
Irish Parent(s)=1	0.16	-
German Parent(s)=1	0.12	-
Hungarian Parent(s)=1	0.03	
Italian Parent(s)=1	0.07	-
English Parent(s)=1	0.06	-
Polish Parent(s)=1	0.06	-
Dutch Parent(s)=1	0.03	-
Scottish Parent(s)=1	0.01	-
Parent(s) of other ethnicity=1	0.02	
Father Deceased=1	0.22	-
Mother Deceased=1	0.06	-
Apprentice=1	0.03	-
Usual Hours of Work per Day	9.76	6.50 – 13.70
Age Beginning Work	13.00	8.00 – 16.00
Weekly Earnings	$4.62	$1.50 – $17.50
Percent Earnings Given to Parent	95.70	0.00 – 100.00
Earnings Necessary for Own Support=1	0.48	-
Evening or Night Work=1	0.03	-
Glasswork Industry=1	0.19	-
Textile Industry=1	0.13	-
Silk Industry=1	0.11	-
Flax Industry=1	0.08	-
Service Industry=1	0.08	-
Tobacco Industry=1	0.06	-
Retail Industry=1	0.05	-
Pencil Industry=1	0.04	-
Would Prefer School to Work=1	0.06	-
Years of Schooling	5.62	0.25 – 8.00
Ever Attended Night School=1	0.38	-
Months Attended Night School	2.51	0.00 – 21.00
Able to Read=1	0.95	-
Able to Write=1	0.85	-
Able to Do Math=1	0.79	-
Literate and Numerate=1	0.76	-

Notes: "Other" ethnicity includes respondents from Russia, Nova Scotia, Sweden, France and Switzerland. Usual hours of work per day is calculated using the times respondents reported beginning and ending work, along with information about the time allotted for lunch at the respondents' places of employment.
Source: "Survey of 943 Child Laborers in New Jersey, 1903" as described in Carter, Susan B., Roger L. Ransom, Richard Sutch, and Hongcheng Zhao. 1993. "Codebook and user's manual: A survey of 943 child laborers in New Jersey, 1903. Reported in the twenty-sixth annual report of the New Jersey Bureau of Statistics of Labor and Industries." Berkeley: Institute of Business and Economic Research.

occupations are underrepresented. In the analysis that follows, I control for city of residence, gender, and industry of employment so far as possible to mitigate biases introduced through the survey design, but nonetheless care should be taken interpreting the results.

2.2 Evening School Attendance

The vast majority of children in the dataset typically began the workday at seven in the morning and ended the workday at either five or six in the evening, and thus would have potentially been able to attend evening classes. Approximately 38 percent of the children had attended night school for some length of time since beginning work. Comparisons of the child workers who reported ever attending night school since beginning work with the entire sample of child workers are given in table 14. There were virtually no gender differences in evening attendance overall. However, the responses varied greatly by age group, with boys more likely to have attended than girls up until age 15 at which this pattern reversed. Given the potential differences in school and work age profiles of boys and girls, grouping these children by the age at which they began work is also illustrative (table 15).

To characterize factors associated with higher or lower likelihood of evening school attendance, conditional on being a working child, I estimate the following equation:

$$\Pr(Attend_{i,c} = 1 \mid x_{i,c}, \xi_c) = \Phi(\alpha + \beta x_{i,c} + \xi_c) \qquad (1)$$

where $Attend_{i,c} = 1$ if individual *i*, residing in city *c*, has ever attended an evening school, Φ is the cumulative density function of the standard normal distribution, and $x_{i,c}$ is a vector of individual characteristics, including age, age at first beginning to work, gender, nationality, indicators for having a deceased father or mother, and indicators for industry of employment. In

Table 14
Description of the Children Surveyed

	Proportion of Entire Sample	Proportion of Night School Attendees
Male	0.52	0.50
Age 12	0.01	0.00
Age 13	0.02	0.01
Age 14	0.19	0.13
Age 15	0.30	0.25
Age 16	0.26	0.32
Age 17	0.21	0.28
Age 18	0.01	0.02
Father Deceased	0.22	0.22
Mother Deceased	0.06	0.04
Either Parent Foreign-Born	0.55	0.65

Notes: Night school attendees were the respondents who had attended evening school since beginning to work. Respondents who had one or more foreign-born parents listed the following countries as parental birthplaces: Germany, Russia, Ireland, Italy, England, Scotland, Nova Scotia, Poland, Hungary, Sweden, France, Austria, Holland, and Switzerland.
Source: "Survey of 943 Child Laborers in New Jersey, 1903" as described in Carter et al. (1993).

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Table 15
Working Children's Night School Attendance by their Ages Starting Work

Age at which respondent started to work	Total number of girls in survey	Number of girls who had attended night school	Percentage of girls who had attended night school	Total number of boys in survey	Number of boys who had attended night school	Percentage of boys who had attended night school
Age 8	0	0	0.00%	1	1	100.00%
Age 9	0	0	0.00%	0	0	0.00%
Age 10	1	0	0.00%	3	3	100.00%
Age 11	4	0	0.00%	16	5	31.25%
Age 12	70	7	10.00%	146	34	23.29%
Age 13	202	83	41.29%	213	90	42.25%
Age 14	152	77	50.66%	90	41	45.56%
Age 15	19	9	47.37%	14	3	21.43%
Age 16	3	0	0.00%	0	0	0.00%
Age 17	1	.	.	1	.	.
TOTAL	452	176	38.94%	484	177	36.57%

Notes: Night school attendance was based on whether the child had attended night school since beginning to work. Observations were omitted for children who did not give their age upon beginning work or did not respond to the night school question.
Source: "Survey of 943 Child Laborers in New Jersey, 1903" as described in Carter et al. (1993).

the final specification I also include an indicator of whether the youth perceives his wages as "necessary for his own support". With the inclusion of fixed effects for city of residence (ξ_c), the coefficients of interest are determined by variation in working children's characteristics within cities.

Table 16 presents the results for boys and girls (column 1), as well as results separated by gender (columns 2-7). Overall, boys and girls were about equally likely to have attended evening schools since beginning to work.[72] Although borrowing constraints may have prompted households to reduce investments in children's schooling following the death of a parent (e.g., see Becker and Tomes 1986; Gertler et al. 2004), in this sample the loss of a father was not a

[72] Further investigation of gender differences in night school attendance among the workers reveals that younger boys were more likely than girls to have attended evening school, while the reverse was true for children ages 14 and above.

Table 16
Evening School Attendance of Working Youths (Ages 12-18) in New Jersey, 1903

	Both	Girls	Boys	Girls	Boys	Girls	Boys
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Male	0.045						
	(0.031)						
Father deceased	- 0.007	0.036	- 0.021	0.027	- 0.028	- 0.009	- 0.073
	(0.038)	(0.054)	(0.056)	(0.052)	(0.053)	(0.057)	(0.058)
Mother deceased	- 0.146*	- 0.147	- 0.092	- 0.157	- 0.120	- 0.179	- 0.161
	(0.071)	(0.099)	(0.106)	(0.096)	(0.101)	(0.097)	(0.104)
Austrian parent(s)	0.128	0.372**	- 0.047	0.323	- 0.021	0.320	- 0.052
	(0.140)	(0.129)	(0.201)	(0.178)	(0.190)	(0.182)	(0.187)
Dutch parent(s)	0.153	0.048	0.244*	- 0.010	0.219*	- 0.014	0.213
	(0.106)	(0.202)	(0.110)	(0.205)	(0.110)	(0.201)	(0.109)
English parent(s)	0.038	0.055	0.000	0.029	- 0.072	0.044	- 0.064
	(0.071)	(0.088)	(0.112)	(0.088)	(0.106)	(0.087)	(0.106)
German parent(s)	- 0.053	- 0.104	0.067	- 0.105	0.055	- 0.087	0.045
	(0.052)	(0.063)	(0.075)	(0.064)	(0.072)	(0.066)	(0.071)
Hungarian parent(s)	- 0.398**		- 0.287*		- 0.238		- 0.247
	(0.075)		(0.146)		(0.152)		(0.160)
Irish parent(s)	0.022	0.034	0.011	0.060	- 0.052	0.066	- 0.068
	(0.051)	(0.063)	(0.077)	(0.065)	(0.075)	(0.065)	(0.075)
Italian parent(s)	- 0.334**	- 0.389**	- 0.219*	- 0.394**	- 0.232*	- 0.382**	- 0.298**
	(0.053)	(0.052)	(0.100)	(0.051)	(0.097)	(0.053)	(0.089)
Parent(s) other ethnicity	- 0.270**	- 0.175	- 0.273*	- 0.189	- 0.190	- 0.244	- 0.193
	(0.094)	(0.157)	(0.123)	(0.154)	(0.145)	(0.145)	(0.145)
Polish parent(s)	- 0.172	- 0.043	- 0.269	- 0.096	- 0.366**	- 0.083	- 0.396**
	(0.094)	(0.114)	(0.149)	(0.121)	(0.116)	(0.119)	(0.103)
Scottish parent(s)	0.179		0.047		0.278*		0.237
	(0.121)		(0.177)		(0.125)		(0.135)
Service industry				- 0.121	- 0.494**	- 0.102	- 0.484**
				(0.124)	(0.143)	(0.126)	(0.138)
Retail industry				- 0.113	- 0.578**	- 0.121	- 0.531**
				(0.129)	(0.120)	(0.130)	(0.127)
Other industry				- 0.145	- 0.454**	- 0.116	- 0.410**
				(0.113)	(0.138)	(0.115)	(0.141)
Tobacco industry				0.118	- 0.525**	0.124	- 0.483**
				(0.113)	(0.175)	(0.116)	(0.181)
Textiles industry				- 0.034	- 0.403*	- 0.026	- 0.341
				(0.110)	(0.176)	(0.112)	(0.181)
Silk industry				- 0.093	- 0.109	- 0.065	- 0.067
				(0.174)	(0.178)	(0.175)	(0.174)
Flax industry				- 0.166	0.023	- 0.144	0.068
				(0.179)	(0.128)	(0.182)	(0.122)
Age began working						- 0.014	- 0.080*
						(0.039)	(0.034)
Wages necessary for own support?						0.105	0.073
						(0.055)	(0.059)
Observations	781	378	379	378	379	375	377

Notes: Coefficients shown are from probit estimation and are reported as average partial effects. Specifications include city of residence fixed effects. Standard errors are shown in parentheses; * significant at 5% level; ** significant at 1% level.
Source: "Survey of 943 Child Laborers in New Jersey, 1903." as described in Carter et al. (1993).

strong predictor of the probability of attending night school. Of course, losing a father may have lowered *day school* attendance by increasing the child's likelihood of working to support household consumption, but conditional on working there is little evidence that youths who had lost their father were substantially less likely to attend *evening school*. The working girls, whose mothers had died, however, were much less likely to have attended evening school. This may be because losing a mother alters the value of older daughters' time at home in the evening, reflecting greater responsibilities for caring for siblings and other household chores.[73] Since children in poor households often enter the labor force before attaining their desired level of schooling, it is not surprising that (conditional on observable characteristics) girls in this sample who worked out of perceived necessity were approximately 10 percentage points more likely to have attended evening school.

While simply having a foreign-born parent is not correlated with night school attendance, choices did differ significantly across ethnicities.[74] In particular, children with one or more parent from Italy or Hungary were approximately 22 to 39 percentage points less likely than the native population (the omitted category) to have ever attended evening school, while the boys with Dutch parentage and girls with Austrian parentage attended evening school with greater likelihood. Since the regression specification includes city and industry fixed effects and the results vary substantially by gender, the cross-ethnicity differences cannot be explained by group tendencies to cluster in particular cities and industries. Instead, the patterns might reflect group differences in income or in norms regarding youths' time allocation. Van Kleeck (1911), for example, suggested that Italian families were especially reluctant to allow their daughters to

[73] The loss of a mother could also influence time allocation within the household if the of mothers and fathers attached different values to educating boys and girls or if the responsibility for educating children fell to the mother (e.g., see Emerson and Souza 2002).
[74] Perlmann (1989) documents ethnic differences in schooling norms and outcomes during this time period.

venture out in the evenings to attend school since they would incur "unpleasant gossip in the neighborhood" and forgo household responsibilities that served as preparation for married life (p. 25). The results here, which indicate Italian girls were even less likely than Italian boys to attend evening schools, are consistent with this observation. Group differences in expectations regarding boys' and girls' returns to educational investments or participation in family-based house work (such as taking in laundry, sewing, tobacco preparation, etc.) may also contribute to the observed patterns.[75]

For boys, employment in retail and service was associated with a decreased probability of evening school attendance relative to employment in glassworks (the omitted category), silk, or flax industries. These results are consistent with the idea that enforcement patterns of compulsory education requirements influenced youths' evening school enrollment. Glassworks, silk, flax, and textile industries were infamous for employing very young children, and these industries received a great deal of attention from labor inspectors.[76] Since employers would be fined for each worker found in violation of the compulsory schooling component of child labor laws, they had strong incentives to require young workers to attend evening schools *if* they believed labor inspectors were likely to enforce schooling requirements. In contrast, state law prohibited inspectors from entering establishments aside from factories, such as grocery stores, bakeries, barber shops and other retail and service establishments. Moreover, regulations banned

[75] de Graffenried (1890) describes family work in tenements writing, "Here is brought tobacco for the whole household to work up, and every family in the huge structure must engage in this occupation or be turned out of their home. Parents and older sons and daughters roll cigars while the younger prepare the weed, even the school children being compelled to work in the afternoons and far into the night" (p. 100).

[76] The New Jersey factory inspector's report for 1888 stated that children under age 16 comprised up to 48 (20, 37, 87) percent of employment in silk mills (flax mills, glass manufactures, glass tube works, respectively). Other years' reports discuss the schools that factory operatives were supposedly attending and described dismissals for violation of school-related (or minimum work age) regulations (Field 1910, 115).

truancy officers from entering any place of employment (Field 1910, 55).[77]

2.3 Duration of Day and Evening School Attendance

Although evening school critics frequently pointed toward problems of irregular attendance and early drop out, little is known about the factors that influenced persistence (or lack thereof) in the evening schools and whether the same factors would also influence persistence in day schools. Survey information regarding the length of time a child attended day school and the number of months he had attended evening school since beginning work facilitates an empirical investigation of these questions, as well. Table 17 presents OLS estimates for the length of time spent in each type of schooling as a function of the individual-level characteristics described above and an indicator for city of residence.[78] The results for months in evening school are presented for the subsample that attended evening school at some point since beginning to work (columns 1-6), while the results for months in day school are presented for the entire sample (columns 7-10).

Although nationality was not a strong predictor of the length of time a youth attended evening school (conditional on having attended), the results for length of time the child attended day school differ substantially by nationality. For example, Italian boys exhibited no differences in the duration of night school attendance (relative to native-born boys), but they had attended

[77] Alternatively, evening schools may have chosen to operate close to specific manufacturing establishments, expecting that a large concentration of working children would benefit. This is unlikely to be driving the entire result, however, since proximity to evening schools would have likely influenced girls' attendance decisions, as well as or more so than boys' decisions.

[78] Ideally, one would account for the fact that many youths in the sample chose to attend zero months of evening school. However, the consistency of Tobit estimates, which account for the "corner solution" nature of the decision, relies heavily on the normality of the outcome for strictly positive values. Here, months of evening school attendance are clustered at only a handful of values. Similarly, null hypotheses that the data satisfy strong parametric assumptions of Poisson or related count data models are strongly rejected in the data. Consequently, OLS estimates provide an approximation. Controlling for access to evening schools using the number of evenings schools operated in the previous year (and =0 for cities without evening schools), as well as the length of the day school term instead of city indicators does not qualitatively change the results.

Table 17
Months of School Attendance of Working Youths (Ages 12-18) in New Jersey, 1903

	Evening School						Day School			
	Girls			Boys			Girls		Boys	
Austrian	1.155	1.742	1.071	-0.809	-0.658	-0.965	-4.128	-3.200	-4.305	-2.181
	(1.596)	(1.922)	(1.674)	(2.716)	(2.755)	(2.472)	(8.185)	(8.114)	(6.747)	(6.376)
Dutch	-1.053	-1.047	-0.751	0.816	0.882	0.552	-1.227	-1.417	-5.559	-4.770
	(1.108)	(1.125)	(0.979)	(1.225)	(1.302)	(1.170)	(6.221)	(6.160)	(4.520)	(4.270)
English	-0.707	-0.732	-0.493	-1.122	-1.223	-1.598	-6.522*	-6.892*	-6.133	-6.436
	(0.471)	(0.485)	(0.429)	(1.206)	(1.237)	(1.118)	(3.127)	(3.112)	(3.807)	(3.599)
German	-0.575	-0.373	-0.448	0.167	0.226	0.012	8.886**	9.474**	-1.965	-1.041
	(0.475)	(0.520)	(0.460)	(0.822)	(0.843)	(0.756)	(2.576)	(2.594)	(2.708)	(2.558)
Hungarian	0.000	0.000	0.000	1.047	1.999	-1.205	-1.005	-0.489	-5.563	-1.818
	(0.000)	(0.000)	(0.000)	(3.372)	(3.702)	(3.368)	(5.773)	(5.725)	(9.531)	(9.013)
Irish	-0.328	-0.130	-0.579	-0.243	-0.354	-0.254	-1.995	-1.656	-4.671	-4.124
	(0.371)	(0.394)	(0.351)	(0.813)	(0.836)	(0.752)	(2.387)	(2.383)	(2.694)	(2.550)
Italian	-0.134	0.067	0.410	-1.823	-1.940	-3.174*	-2.355	-2.115	-12.884**	-7.884
	(1.303)	(1.320)	(1.148)	(1.611)	(1.748)	(1.581)	(3.633)	(3.613)	(4.192)	(4.098)
Other	1.161	1.125	0.245	0.010	0.062	0.097	7.807	7.414	-5.603	-4.667
	(1.293)	(1.316)	(1.153)	(2.416)	(2.441)	(2.212)	(7.013)	(7.426)	(5.462)	(5.170)
Polish	-0.181	-0.059	-0.131	2.948	2.201	1.952	-2.494	-2.694	-8.774	-4.705
	(1.565)	(1.602)	(1.399)	(3.567)	(4.678)	(4.197)	(3.750)	(3.724)	(5.249)	(4.984)
Scottish	-0.621	-0.259	-0.613	0.261	0.788	-1.580	-9.382	-9.046	-12.168*	-8.192
	(0.735)	(0.767)	(0.674)	(1.767)	(2.695)	(2.454)	(5.502)	(5.465)	(6.188)	(5.870)
Dad dead	-0.330	-0.342	-0.687	0.304	0.160	0.477	2.100	1.998	0.013	1.317
	(0.350)	(0.367)	(0.407)	(0.662)	(0.675)	(0.663)	(1.854)	(2.008)	(1.746)	(1.806)
Mom dead	-0.360	-0.176	0.079	-3.969*	-4.260*	-2.570	-0.689	0.156	1.021	1.817
	(0.868)	(0.892)	(0.795)	(1.997)	(2.014)	(1.829)	(3.468)	(3.626)	(2.915)	(2.951)
Service		-0.922	0.657		-8.289*	-3.401				
		(2.261)	(1.982)		(3.582)	(3.316)				
Retail		-0.594	0.690		-9.248*	-4.073				
		(2.302)	(2.018)		(3.812)	(3.525)				
Other		-0.315	1.363		-8.116*	-3.972				
		(2.242)	(1.970)		(3.389)	(3.116)				
Tobacco		-0.382	1.536		-7.030	0.026				
		(2.452)	(2.148)		(6.180)	(5.664)				
Textiles		0.058	1.404		-8.110*	-3.795				
		(2.160)	(1.888)		(3.729)	(3.427)				
Silk		-0.562	0.847		-7.620	-5.090				
		(2.515)	(2.199)		(4.474)	(4.032)				
Flax		-1.214	0.335		-7.312	-4.971				
		(2.543)	(2.225)		(4.458)	(4.015)				
Age wk			-2.229**			-2.388**		3.054*		7.303**
			(0.356)			(0.405)		(1.386)		(1.086)
Own sup			0.991*			-0.963		-0.517		-2.745
			(0.413)			(0.789)		(2.114)		(2.205)
Constant	2.333	9.241**	40.759**	0.554	0.535	29.335**	46.953**	13.612	25.233**	-54.579**
	(2.592)	(1.616)	(5.212)	(3.120)	(3.138)	(5.575)	(11.756)	(19.21)	(8.989)	(15.435)
R-squared	0.674	0.685	0.767	0.373	0.400	0.525	0.577	0.581	0.687	0.724
Observations	168	168	167	170	170	170	421	418	456	452

Notes: Coefficients shown are from OLS estimation and specifications include city of residence fixed effects. Columns 1-6 include only the observations, which reported attending evening school for some length of time since beginning work. Standard errors are shown in parentheses; * significant at 5% level; ** significant at 1% level.
Source: "Survey of 943 Child Laborers in New Jersey, 1903" as described in Carter et al. (1993).

day school for much shorter periods than their native-born counterparts. Girls and boys with parents from England or Scotland had attended the day schools for a shorter period, while German girls had attended longer. Interestingly, having lost a mother was not associated with fewer months of night school attendance for girls, but was associated with fewer months of attendance for boys. Similarly, industry of employment mattered only for boys and all of the boys who had attended evening school at some point attended for fewer months than those working in the glass industry (the omitted category). Since youths who started working later had additional time to obtain their desired level of education in the day schools, it is not surprising that beginning work at a later age is associated with more months spent in day school and fewer months of evening school attendance.[79]

2.4 Literacy and Numeracy of Working Youths in New Jersey

To consider the effect of attending evening school on literacy and numeracy outcomes, I again make use of the survey data of New Jersey child workers described above. Specifically, I estimate probit models for the probability of being literate given the age and gender of the child, city of residence, whether either parent is foreign, whether either parent is deceased, and the variable of interest – attendance at night school. I also estimate similar models for the ability to write and do math. Results for all three specifications are reported in table 18.

A working child with either parent born outside of the United States was less likely to be able to read, write, or do math. This was most likely due to the relatively harsh standards of living faced by many immigrants in New Jersey during this time period. Since in many cases, both parents were likely to have been working, heavier responsibilities for children within the

[79] Since age at which the youth began working is potentially endogenous in these equations, the coefficients should be interpreted with caution.

home and perhaps at work may have further limited the time allocated to schoolwork. A child with either parent deceased had a slightly higher probability of reading, writing, and doing math. This result is contrary to what we would expect if the sample contained both children in and outside of the labor market. For a sample of *working* children, however, the indicator for having lost a father may capture the fact that that those children left school (and entered the labor market) only once a parent had died rather than dropping out early due to boredom or lack of ability. In this sample, after controlling for the household characteristics and evening school attendance, gender did not seem to explain much of the differences across children's outcomes. Lastly, and of primary interest to the current study, having attended evening school is associated with an increased probability for each of the educational outcomes considered.[80]

[80] The Rivers-Voung test, with percent of years since beginning work (or since the child turned 12) that the child had access to evening school as an excluded variable, fails to reject the null hypothesis that evening school attendance is exogenous. Nonetheless, the potential endogeneity of evening school attendance or evening school availability itself (in a cross-section of observations) suggests caution in accepting the naïve probit estimates as measuring causal effects.

Table 18
Educational Outcomes of Working Youths (Ages 12-18) in New Jersey, 1903

	Ability to read	Ability to write	Ability to do math
Attended night school	0.060**	0.127**	0.186**
	(0.001)	(0.038)	(0.026)
Either parent is deceased	0.036**	0.095**	0.094**
	(0.009)	(0.017)	(0.034)
Either parent is foreign	- 0.180*	- 0.127*	- 0.156**
	(0.079)	(0.055)	(0.040)
Male	0.005	- 0.040	- 0.071
	(0.014)	(0.035)	(0.043)
Number of observations	810	842	828

Notes: Coefficients are from probit estimation and are reported as average partial effects. Specifications include age dummies and city of residence fixed effects. Robust standard errors, clustered at the city level, are shown in parentheses. The variable "Attended night school" is 1 if the respondent has attended night school since beginning to work. Respondents who had one or more foreign-born parents listed the following countries as parental birthplaces: Germany, Russia, Ireland, Italy, England, Scotland, Nova Scotia, Poland, Hungary, Sweden, France, Austria, Holland, and Switzerland.
Source: "Survey of 943 Child Laborers in New Jersey, 1903" as described in Carter et al. (1993).

3. Summary

Although we may not be able to generalize the specific results from this survey to the overall population of working youths, the New Jersey data do provide useful insights that cannot be discerned from other sources. First, although evening schools lowered the opportunity cost of schooling for youths from relatively poor backgrounds and private returns to education appear to have been high in this period (Goldin 1999), evening schools did not induce the majority of working children to pursue part-time schooling. Rather, the immediate importance of children's contribution to household production (especially when the mother was absent) and to family income weighed heavily in children's work and schooling decisions. Attracting a larger share of working children into schooling apparently would have required going further, perhaps even compensating children or their parents for time spent in school. Second, the evidence suggests

that patterns of law enforcement mattered – establishments subject to inspection were far more likely to have child workers pursuing schooling than those that were insulated from inspection. Finally, night school attendance was associated with improved educational outcomes, namely literacy, numeracy, and ability to write.

CHAPTER VI

CONCLUSION

In addition to the compilation and synthesis of qualitative historical descriptions of evening schools, this dissertation provides the first quantitative characterization of evening schools in the U.S. and holds broader relevance for understanding the role of non-traditional school alternatives. Analyses of primary and secondary historical sources, a unique dataset of child workers, a city-level panel dataset, and micro-level census data reveal a number of key insights. First, the historical literature emphasizes that the public evening school movement was motivated largely by the belief that education for the poor yielded significant positive externalities, and cross-city regression analysis further reveals that variation in immigrant population size and the extent of overcrowding in day schools had a significant influence on evening school provision. Second, while evening schools reduced the opportunity cost of school attendance by allowing full-time day work, they did not induce anything near universal take up of the schooling opportunity. The case study of working children in New Jersey suggests that the value of children's time in evening home production and the enforcement pattern of schooling requirements strongly influenced children's evening school decisions. Third, although evening schools were far from ideal educational settings, the micro-data suggest that they successfully promoted enrollment and literacy for working youths and the children of immigrants.

Advocating for evening schools in England and Wales, Horace Mann wrote, "…there is something so natural and inevitable in [the] tendency to early labour, that instead of lamenting

the existence of this state of things as the cause of our ill-success, we ought probably to be led to suspect that our educational machinery is ill-adapted to the circumstances of our condition" (Mann 1862). The public evening school movement, which Mann and other educators helped to bring about in the late-nineteenth century, offered an innovative adaptation of the American "educational machinery" to fit the needs of poor families. The schools are an excellent example of the flexibility of American educational institutions in the past, a characteristic that broadly contributed to high levels of economic and social mobility and to U.S. leadership in education during the "Human Capital Century" (e.g., see Goldin 1999, 2003).

Although this dissertation has examined evening schools in the historical context of the U.S., it is notable that Mann's calls to adapt school schedules to the needs of working children are still echoed more than a century later. Striving to reduce dropout rates and nonattendance among relatively poor youths, educators in many countries are incorporating non-traditional school alternatives into their overall education strategies. Despite the growing relevance of this type of educational alternative, little quantitative research has examined the alternative schools' attendance, effectiveness, or potential unintended consequences. The broad-based quantitative evidence and historical perspective offered in this paper lends insights into these considerations. In particular, U.S. historical experience suggests that evening schools can help children advance their education even in settings where compulsory schooling (or child labor) laws are imperfectly enforced, where schools are overcrowded, or where poor children do not pursue full-time day school because the opportunity costs are too high. Under these conditions, the appropriate measure of evening school success is not a comparison with student outcomes in regular day schools, but rather with a no-evening-school counterfactual in which more poor children forgo school all together.

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