

An Assessment of the Labor Market, Income, Health, Social, Civic and Fiscal Consequences of Dropping Out of High School

The Fiscal Economic Consequences of Dropping Out of High School

State and Local Fiscal Consequences of High School Dropout Problems in Massachusetts

A three-part study of the dropout crisis and the consequences for the Commonwealth by Northeastern University's Center for Labor Market Studies

Key Findings

11,145 students drop out of Massachusetts high schools each year. This has profound consequences for the individuals who drop out and for the communities in which they live. This paper examines the consequences in seven areas:

- **employment and earnings**
- **health and health care coverage**
- **public assistance dependency**
- **family formation**
- **civic participation**
- **incarceration**
- **fiscal costs**

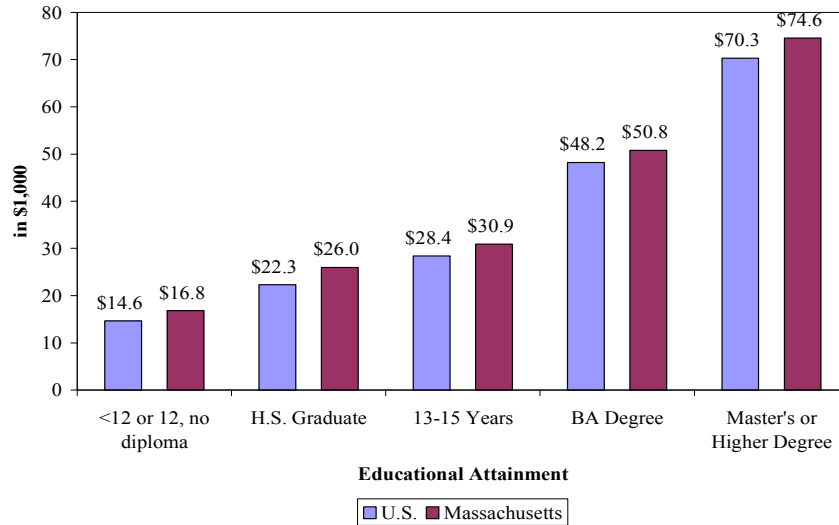
The explanations and calculations show that there is an opportunity to have a profoundly positive impact on the Commonwealth's budget by significantly reducing the dropout rate.

I. Employment and Earnings

- **Dropouts are less likely to work as young adults and over the course of their lives.**
 - Only 20% of 16-19 year old dropouts in Boston worked in 2004-2005, compared with 65% of high school graduates not attending school and 83% of Bachelor degree holders.
 - 55% of Massachusetts' dropouts ages 16-64 were working in 2005, compared with 73% of high school graduates
- **Annually, dropouts earn far less on average than other educational subgroups.** This is due to three factors:
 - They are less likely to obtain employment
 - Those who are employed work fewer hours annually
 - Those who are employed earn lower hourly wages

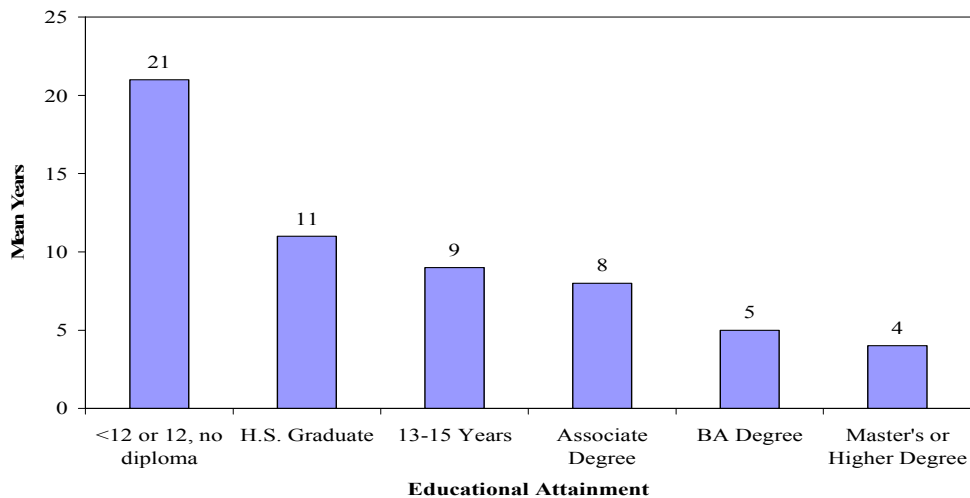
- As shown in the chart below, Massachusetts dropouts earn almost \$10,000 less per year than high school graduates and \$34,000 less than bachelor's degree holders.

Comparisons of the Mean Annual Earnings of 18-64 Year Old Adults by Educational Attainment in the U.S. and Massachusetts, 2005 (in \$1,000)



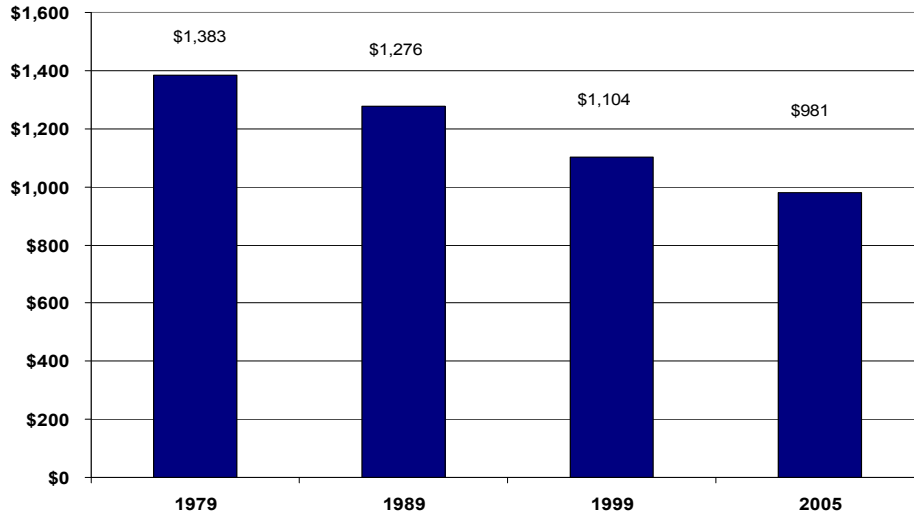
- The long-term effect is that the average dropout earns considerably less over a life-time and spends longer periods of time in poverty.
 - In 2005, the average Massachusetts dropout earned \$456,000 less in a lifetime than the average high school graduate and \$1.5 million less than the average bachelor's degree holder.
 - As charted below, based on 2005 data, dropouts spent an average of 21 years in low incomes status (or lower), while high school graduates and bachelor's degree holders spent averages of 11 and 5 years, respectively.

Mean Expected Years in a Low Income Status Among Massachusetts Adults from Ages 18-64 by Educational Attainment



- **Male dropouts will earn less over their lifetime than they ever did, as the labor market has changed substantially over the last 30 years.**
 - In real dollars, the mean lifetime earnings of male Massachusetts high school dropouts declined by 30% between 1979 and 2005, as charted below.

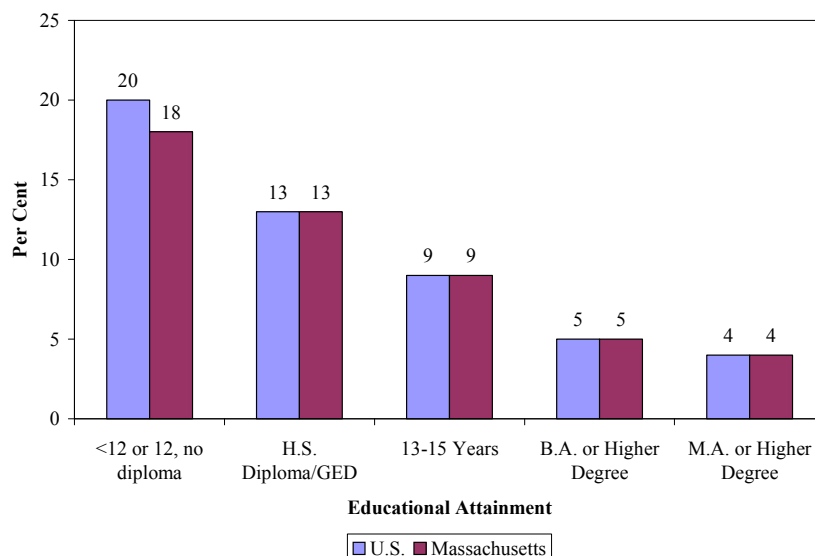
Trends in Mean Lifetime Earnings 18-64 Year Old Male Dropouts Massachusetts, 1979 to 2005 (In Thousands)



II. Health and Health Care Coverage

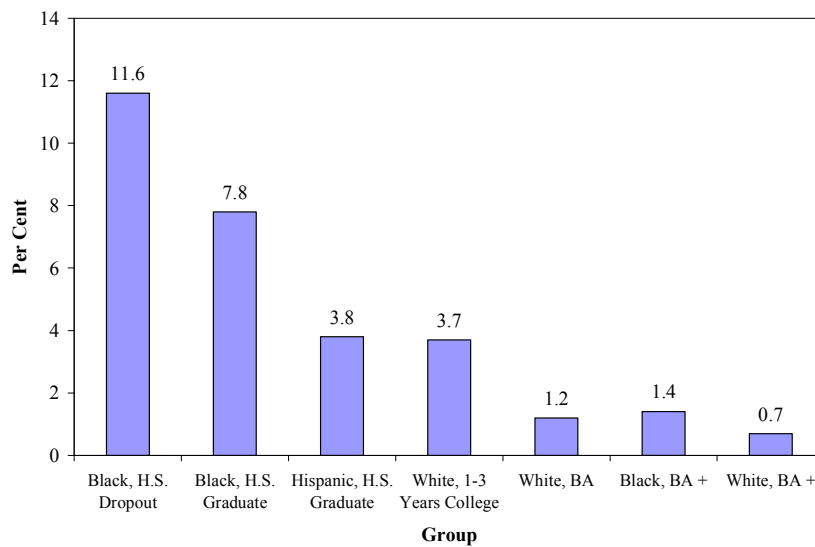
- **Dropouts are less likely to experience good health than those with more education.**
 - As charted below, 18% of Massachusetts dropouts 18-64 reported poor or fair health, compared with 13% of high school graduates and 5% of bachelor's degree holders.

Per Cent of 18-64 Year Old Adults in Massachusetts and the U.S. Reporting Their Health Status as Fair or Poor, March 2006



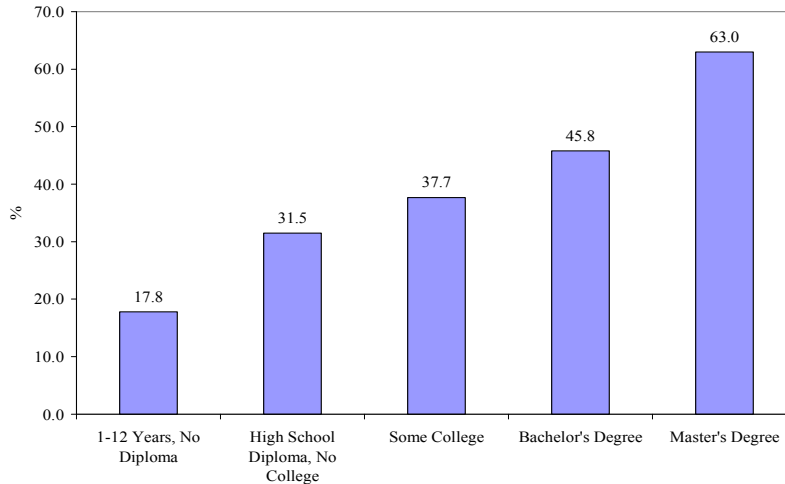
- **Dropouts, particularly Black and Latino men, have a shorter life expectancy than their better-educated peers.**
 - One national, longitudinal study showed that high school dropouts ages 39-46 years old had a mortality rate over twice that of high school graduates and three times that of those with post-graduate schooling.
 - As charted below, Black male high school dropouts have the highest death rates, with Latino male dropouts more likely to die young than White male dropouts.

Death Rates Among Selected Groups of 39-46 Year Old Males In the U.S. by Race-Ethnic Group and Educational Attainment in 2004 (in %)



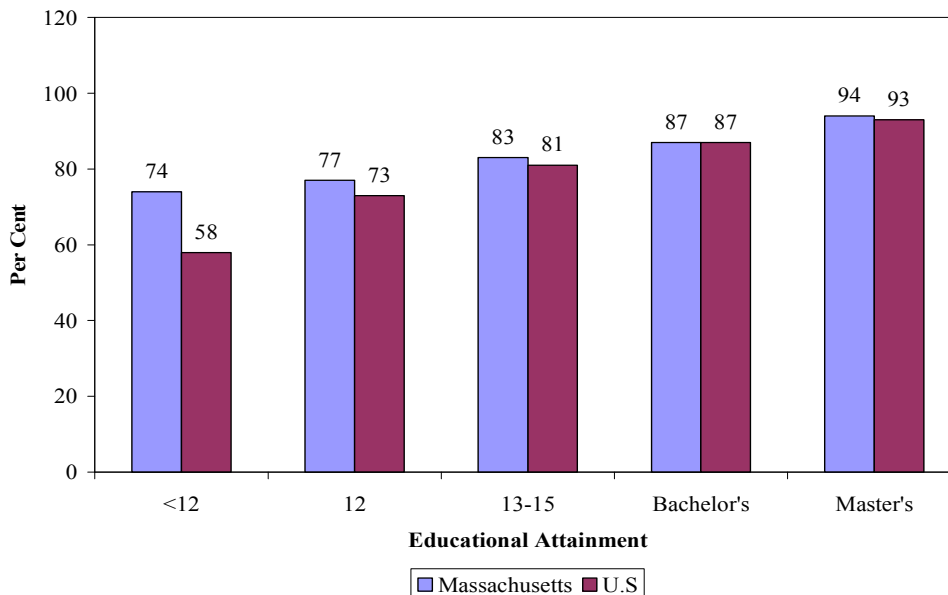
- **Dropouts are substantially more likely to report physical and mental disabilities as adults than those in other educational subgroups.**
 - 27% of adult high school dropouts reported a disability, compared with 13% of high school graduates and 6% of bachelor's degree holders.
- **Dropouts with disabilities are far less likely to be employed than members of other educational subgroups having disabilities, as shown in the chart on the next page**

Employment/Population Ratios of 16-64 Year Old Women With Disabilities By Their Level of Educational Attainment, Massachusetts, 2005 (in %)



- Dropouts with disabilities were more likely to receive public assistance and far more likely to live in poverty than members of other educational subgroups having disabilities.**
 - 65% of dropouts with disabilities received cash public assistance income compared with 50% of high school graduates and 33% of bachelor's degree holders.
 - 12% of dropouts were both disabled and poor or near-poor, compared with 4% of high school graduates and 0.6% of bachelor's degree holders.
- Massachusetts dropouts were less likely to have health insurance than those in other educational subgroups, though more likely to have it than their national peers.**

Health Insurance Coverage Rates of Massachusetts and U.S. Adults (18-64 Years Old) by Educational Attainment, 2004-2005 Averages

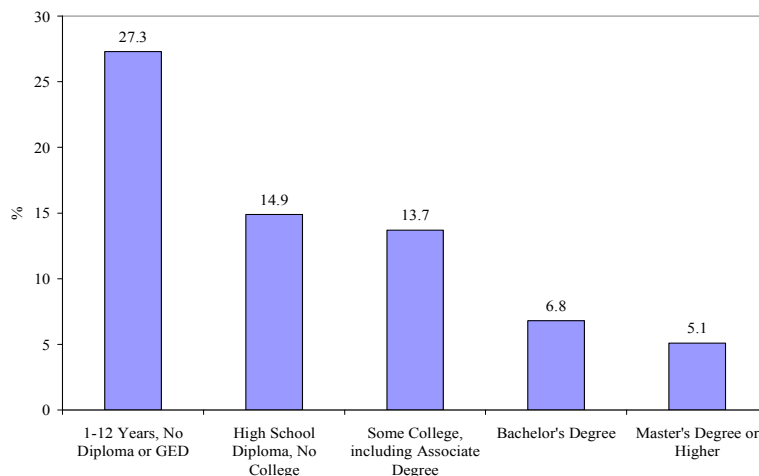


- **A majority of dropouts in our state depend on Medicaid or Medicare for their coverage, while a majority of the total working age population earn their health insurance through an employer**
 - Over half of all Massachusetts dropouts have publicly funded health care through Medicaid or Medicare at a cost of \$8,508 for each dropout insured under one of these programs.
 - Only 18.7 % of the total working age population have publicly funded health care.
 - Only 20% of all Massachusetts dropouts had health insurance coverage through an employer.
 - Over half of the total working age population had health insurance through an employer.

III. Public Assistance Dependency

- **Dropouts are more likely to depend on public assistance, both cash and in-kind, than other educational subgroups.**
 - 27% of Massachusetts dropouts were dependent on cash public assistance of some kind, compared with 14.9% of high school graduations and 6.8% of Bachelor’s degree holders, as charted below.

Percent of the 16-60 Year Old Population in Massachusetts Who Were Dependent on Some Form of Cash Public Assistance Income by Educational Attainment, 2005



- Massachusetts dropouts were also more likely to rely on in-kind public assistance, such as Food Stamps. As shown in below, dropouts were over-represented among Food Stamp recipients.

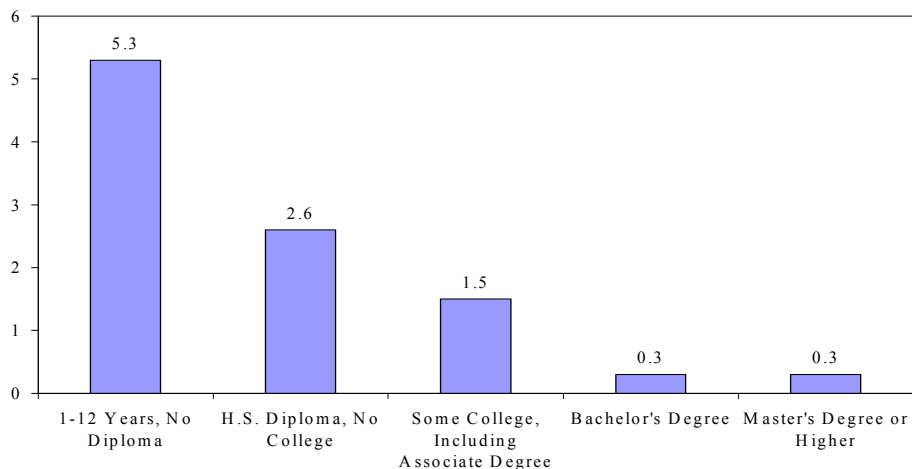
The Educational Distribution of Food Stamp Recipients and the 18-64 Year Old Adult Population in Massachusetts During 2004

	(A)	(B)	(C)
Educational Attainment	Percent of Population 18-64	Percent of Food Stamp Benefit Recipients	Relative Incidence of Food Stamp Beneficiaries (Col. B/ Col. A)
1-12 Years, No Diploma or GED High School Diploma, No College	12.7	40.8	3.21
13 or More Years of Schooling	60.2	7.5	.124

IV. Institutionalization Rates and High School Dropouts

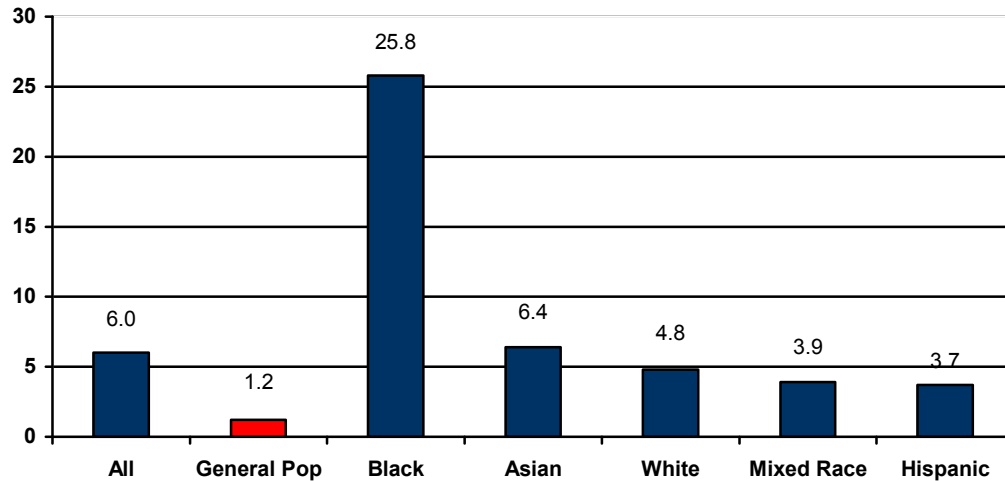
- **Dropouts—particularly young men and young Black men—are much more likely to be incarcerated than those with more education.**
 - The chart below shows that twice as many male dropouts as high school graduates were institutionalized in 2000 and 18 times as likely to be institutionalized as their counter parts with a bachelor’s degree or higher.

Institutionalization Rates of 18-64 Year Old Men by Level of Educational Attainment in the U.S., 2000 (Excluding Those Enrolled in School)



- Among dropouts, young Black male dropouts are most likely to be incarcerated, followed by young Asian and White men, as shown in the chart below.

Percent of 16-24 Years Old Male High School Dropouts in Massachusetts Who Were Institutionalized at the Time of the 2000 Census
Total and by Race-Ethnic Group



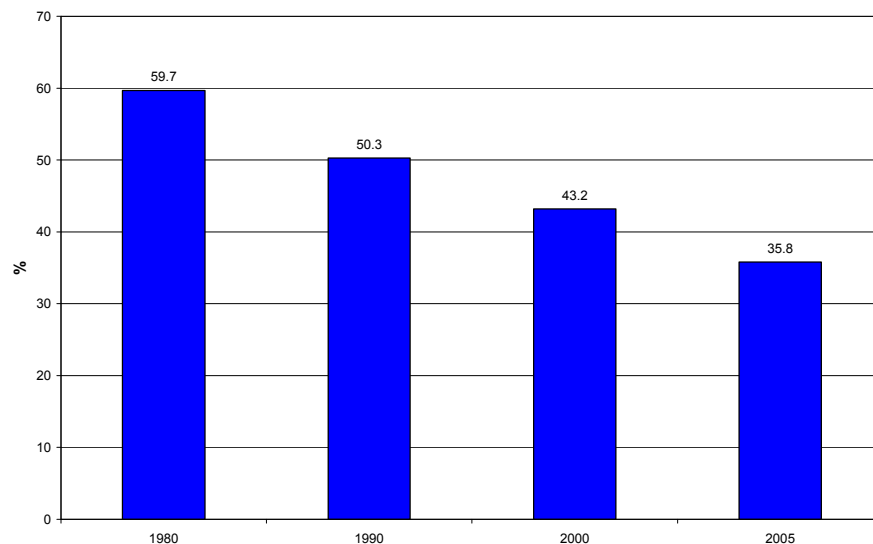
- **Dropouts make up the majority of jail and prison populations.**
 - A 2005 Massachusetts Department of Corrections report found that 70% of jail or prison inmates lacked a high school diploma or GED, though statewide, dropouts represent 12% of the non-elderly population.
- **The higher incarceration rates of dropouts reinforce their already decreased likelihood of obtaining employment.**
 - Young men with criminal convictions and prior incarceration face severe difficulties in obtaining employment and will earn considerably less than their peers with no criminal records, especially Black men.

V. Family Formation and the Accelerating Cycle of Poverty

- **Dropouts are less likely to participate in family and civic life, which affects the quality of life for them and for their children—and has a variety of adverse implications for the future of the Commonwealth.**
- **Dropouts are less likely to marry and more likely to become single parents than any other group—now more than ever.**

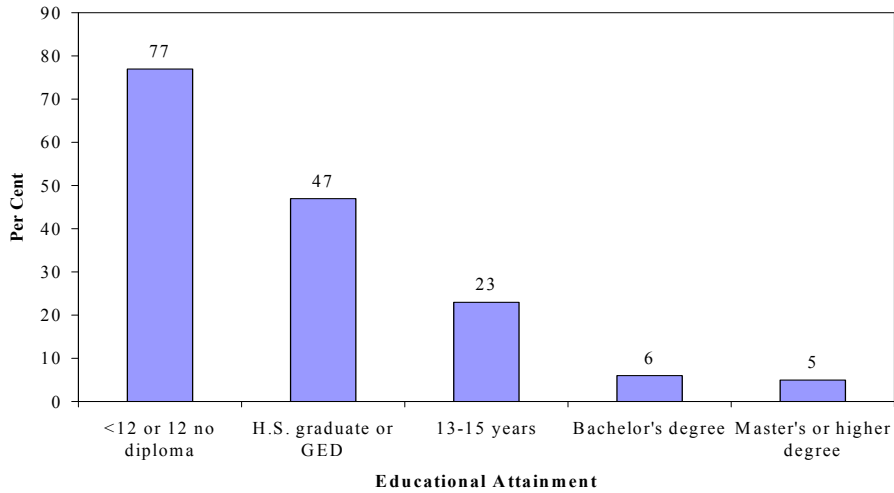
- Only 36% of female dropouts ages 20-64 were married in 2005, compared with 53% of high school graduates and 58% of bachelor's degree holders
- Only 43% of male dropouts ages 20-64 were married in 2005, compared with 60% of high school graduates and 68% of bachelors degree holders
- **The marriage rate for male and female dropouts has declined almost by almost 25 percentage points over 25 years, more than other group.**
 - The 25 year decline was less steep for high school graduates, while Bachelors Degree holders showed virtually no change at all, and those with post-graduate education increased their marriage rates.

Trends in Marriage Rates of Massachusetts Native Born High School Dropouts
20-64 Years Old 1980 to 2005



- **The steep decline in marriage rates of dropouts has not been accompanied by an equivalent decline in their rate of childbearing.**
- **As a consequence, a high and rising share of births to female dropouts in Massachusetts has been taking place out of wedlock.**
 - 77% of 2005 births to female dropouts were out of wedlock, compared with 47% to high school graduates and 6% to Bachelors Degree holders, as shown in the chart on the next page.

Per Cent of Births to Massachusetts Native Born Women (15-50 Years Old) That Were Out-of-Wedlock by Educational Attainment of the Mother, 2005

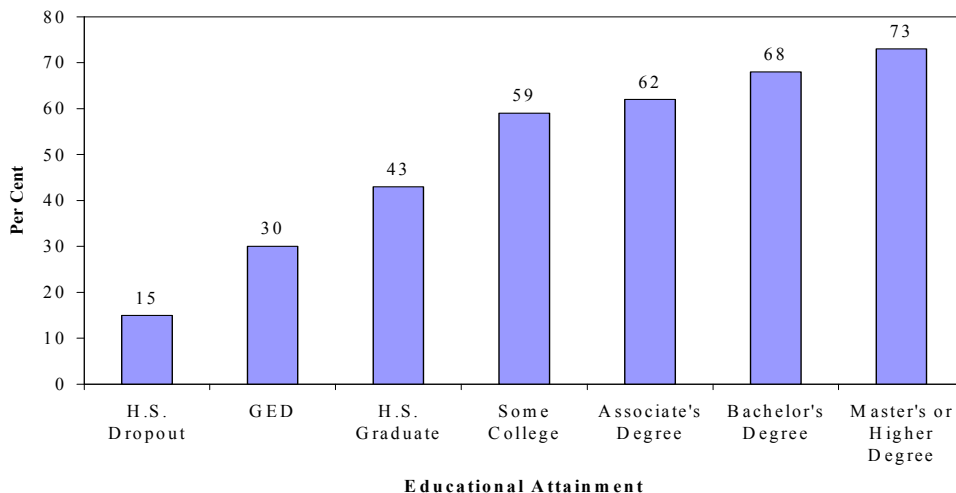


- **Children of individuals with limited schooling—especially single parent families—are more likely to live in poverty and are more at risk of dropping out of school themselves. These marriage and childbearing trends threaten to accelerate the poverty cycle.**

VI. Civic Participation

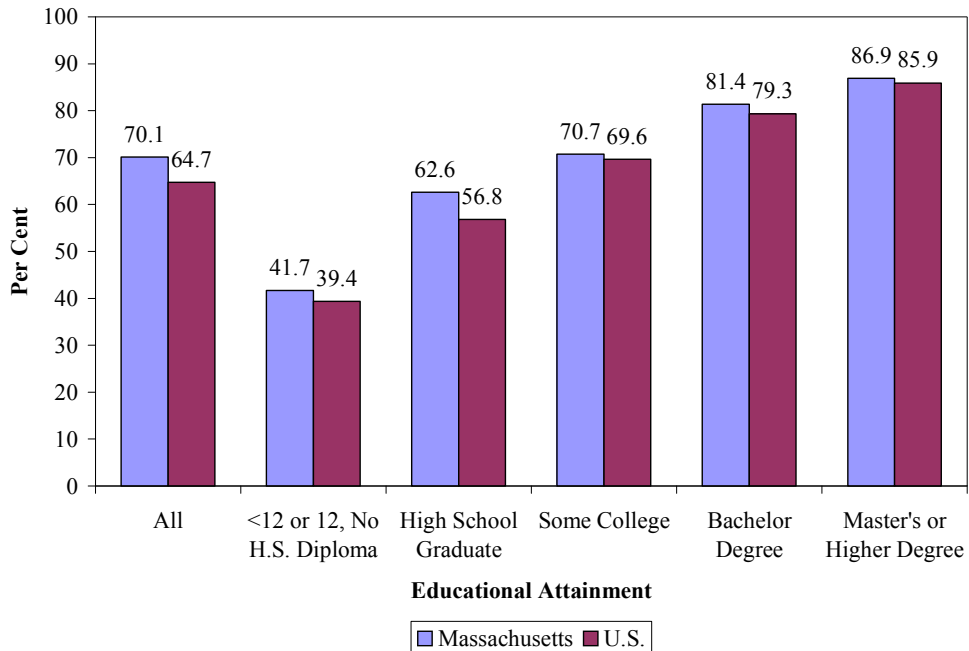
- **Dropouts are less likely to be actively engaged in civic activities, including voting in local and national elections and volunteering for civic organizations.**
 - Voting rates of young adults are strongly associated with their levels of formal schooling, as shown in the chart of voting rates for the 1996 presidential election.

Per Cent of 21-24 Year Olds Who Voted in the 1996 Presidential Election by Educational Attainment, U.S.



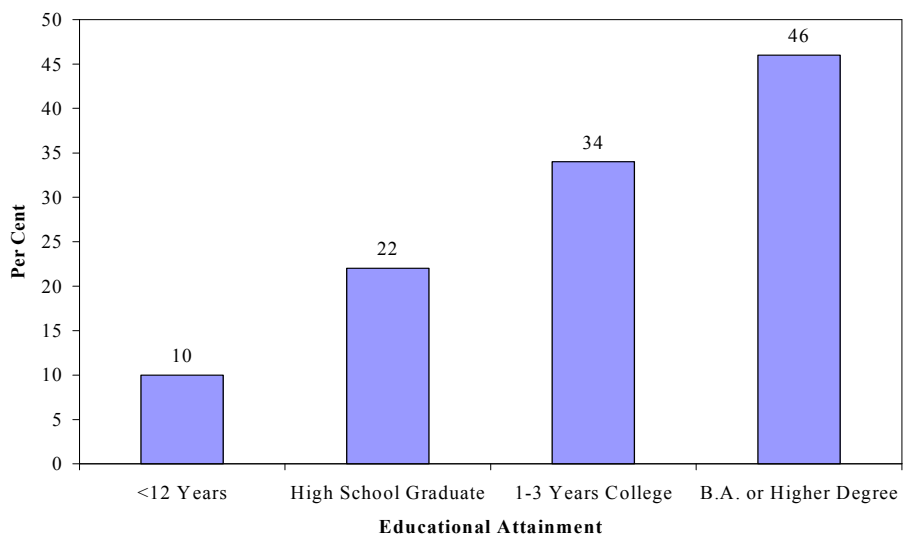
- **Even in a presidential election featuring a local presidential candidate, Massachusetts dropouts' voting rates were significantly lower than those with more education, as shown in the chart below.**

Per Cent of Voting Eligible Adults (18 and Older) Who Voted in the November 2004 Election by Level of Educational Attainment, Massachusetts Versus the U.S.



- **Dropouts are considerably less likely to volunteer in civic associations, as shown in the chart below.**

Per Cent of U.S. Adults 25 and Older Who Did Volunteer Work in 2003 by Educational Attainment



- **The gaps in the civic behaviors, such as voter registration and actual voting, between the best and least well educated adults in the nation have been growing over time.**

VII. Fiscal Consequences

- **The dropout crisis has fiscal consequences for local, state and federal governments.**
- **The estimate below considers three types of fiscal cost:**
 - Lower income and payroll taxes due to lower earnings
 - Higher Medicaid, Medicare and public assistance costs
 - Higher incarceration costs.
- **These costs are calculated for average annual amounts and then multiplied by 47 years—the estimated pre-retirement working lifetime of an individual.**
 - Estimates of payments into the system and transfer costs drawn from the system were calculated using US Census Bureau Public Use Microfiles for each level of educational attainment.
 - The average fiscal cost of a high school dropout is the difference between the net benefit contributed by the average high school graduate and the average high school dropout.
 - This is a conservative estimate of the fiscal cost, as the difference between the net benefit contributed by the average dropout and those with more education than high school graduates would be even greater.

A. Taxes Generated

- **Each Massachusetts dropout paid an annual average of \$2,498 in federal and state income taxes in 2002-2004, compared with the \$5,456 paid by the average high school graduate.**
- **When employers' payroll taxes are added to these figures, a dropout generates an annual average of \$4,315 in taxes, compared with an average of \$7,696 generated by a high school graduate.**
 - The table on the next page displays average taxes contributed by dropouts, high school graduates and Bachelors degree holders.

Tax Payments Made by Massachusetts Adults to State and Local Governments
By Level of Educational Attainment, 2002/2004

Tax Income	(A) High School Dropout	(B) High School Graduate	(C) Bachelor's Degree Holder
Federal Income Tax	\$1,136	\$2,233	\$8,400
State Income Tax	531	986	2,709
Federal Retirement Tax	88	169	266
Social Security Retirement Payroll Tax	884	1707	3,329
Total Tax Payments Plus Employers' Payroll Tax Contributions	2,639	5,095	14,704
Total Individual and Employer	\$4,315	\$7,696	\$18,775

B. Public Assistance or "Transfers"

- **The term "transfers" refers to public support of individual costs in the form of cash and in-kind transfers.**
 - "Cash transfers" are payments, such as unemployment benefits, Social Security payments, public assistance, and workers compensation.
 - "In-kind transfers", are direct support, such as food stamps, rental subsidies, Medicaid or Medicare coverage.
- **Average annual costs for transfers were calculated by dividing the total value of transfers received by each subgroup by the total number of adults in the educational subgroup.**

$$\frac{\text{Total Value of Transfers}}{\text{Total number in educational subgroup}} = \text{Average cost of transfers per individual in that educational subgroup}$$

- **The two tables on the next page display average costs of both cash transfers and in-kind transfers received by dropouts, high school graduates and bachelor's degree holders.**

Cash Transfers Received by Massachusetts Adults by Level of
Educational Attainment and Type of Transfer, 2002/2004

Type of Cash Transfer	(A)	(B)	(C)
	High School Dropout	High School Graduate	Bachelor's Degree Holder
Unemployment Compensation	\$111	\$272	\$167
Workers' Compensation	108	229	5
Social Security Income	1,188	384	236
Supplemental Social Security Income	1,216	326	62
Public Assistance	70	15	2
Veteran's Payments	6	42	162
Survivor's Income	0	5	11
Disability Income	544	189	42
Energy Assistance	14	12	2
Total	3,257	1,474	688

In-Kind Transfers Received by Massachusetts Adults by Level of
Educational Attainment and Type of Transfer

Type of In-Kind Transfer	(A)	(B)	(C)
	High School Dropout	High School Graduate	Bachelor's Degree Holder
EITC	\$126	\$146	\$32
Food Stamp (Market Value)	351	86	14
Medicare (Market Value)	1266	371	178
Medicaid (Market Value)	3451	1083	181
Housing Subsidy (Market Value)	569	167	50
Total	5764	1853	455

C. Incarceration Costs

- **The method for calculating the average annual cost of incarceration for each educational subgroup is similar to that used for calculating the average costs of cash and in-kind transfers.**

$$\frac{\text{Average annual cost of incarceration}}{\text{Total number in educational subgroup}} \times \text{Number in educational subgroup incarcerated} = \text{Average annual cost of incarceration}$$

- **The annual average cost was then multiplied by 47 to calculate the average lifetime costs of incarceration.**
 - The table below shows the average lifetime costs of incarceration for dropouts, high school graduates and bachelor’s degree holders.
 - These figures are based on the Massachusetts Department of Corrections’ annual cost of \$43,025 (2006) and do not include the capital costs of prison construction or physical maintenance.
- **The average lifetime per capita costs of incarceration are \$52,678 for a dropout, compared with \$23,849 for a high school graduate and \$3,133 for a bachelor’s degree holder.**
- **The net incarceration cost for the dropout is the difference between the high school graduate average and the dropout average, which is \$28,829.**

Lifetime Per Capita Costs of Institutionalization for Adults by Educational Attainment, Massachusetts, 2005

	(A)	(B)	(C)
Educational Attainment	Average Lifetime Cost of Institutionalization of Males (in \$)	Average Lifetime Cost of Institutionalization of Females (in \$)	Weighted Average Lifetime Cost of Institutionalization of Both Males and Females (in \$)
1-12 Years, No Diploma or GED	\$80,887	\$18,200	\$52,678
High School Diploma, No College	38,399	6,067	23,849
Bachelor's Degree	4,042	2,022	3,133

D. Total Net Fiscal Impact

To calculate the total fiscal impact, five steps were followed.

1. **Average annual transfers (both cash and in-kind) were subtracted from annual taxes paid to give a figure for net fiscal impact.**

- By this calculation, dropouts were the only educational subgroup that *posed a net fiscal burden*, with an annual average of -\$4,706 in 2002-2004.
- This compares with an annual average *net fiscal benefit* of +\$4,369 for high school graduates.

	<i>Taxes Paid</i>	-	<i>Transfer Costs Incurred</i>	=	<i>Annual Net Fiscal Benefits</i>
Dropouts	\$4,315	-	\$9,021	=	-\$4,706
HS Graduates	\$7,696	-	\$3,327	=	+\$4,369

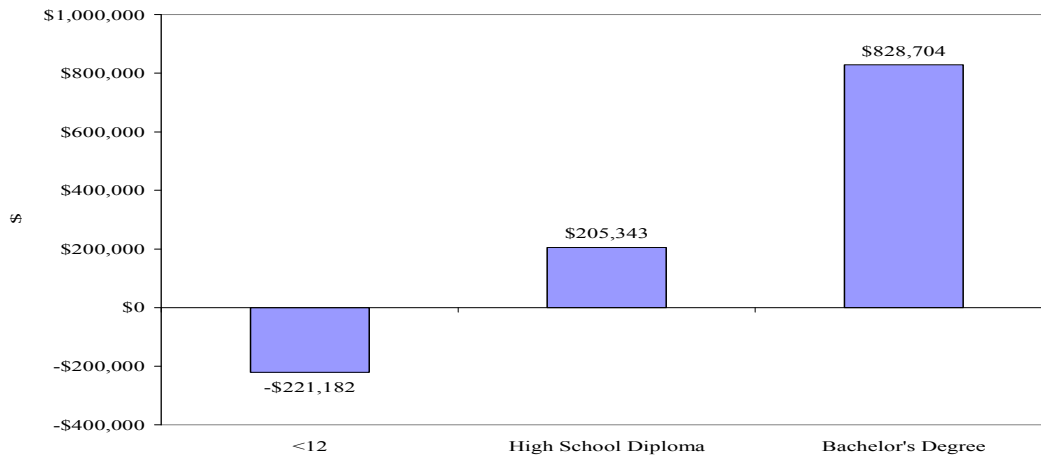
2. **The net annual average fiscal cost of the dropout was subtracted from the benefit generated by the high school graduate.**

- The difference between the two estimates is \$9,075 annually.

3. **The difference was multiplied by 47 years (covering ages 18 to 64) for a lifetime cost, which is charted below for dropouts, high school graduates and bachelor's degree holders.**

- As shown in the chart on the next page, the average lifetime public benefit (really a deficit) generated by a dropout is -\$221,182, compared with +\$205,343 by a high school graduate and +\$828,704 by a bachelor's degree holder.

Lifetime Mean Taxes Paid- Transfers Received by Non-Enrolled 16-64 Year Old Adults in Massachusetts by Educational Attainment, 2002-2004 Averages (in \$)



4. The net fiscal benefit generated by a dropout was then subtracted from that of the fiscal benefit generated by a high school graduate.

- The difference is \$426,525.

5. From the previous page, the net difference between the lifetime incarceration costs of high school graduates and dropouts is \$28,829, which was added to \$426,525 for a total estimated cost of \$456,354—almost half a million dollars over a lifetime.

- In annual terms, each dropout costs \$9,708.
- Boston’s approximately 1,500 annual dropouts will cost the public over \$14 million a year.
- Massachusetts’ 11,145 annual dropouts will cost the public over \$108 million a year.

E. Net Fiscal Impact on State and Local Governments: Isolating the Cost to Massachusetts

To look more specifically at the fiscal impact of the dropout on the Commonwealth, state and local revenue taxes, cash transfer payments, in-kind transfers and incarceration costs were separated from federal taxes, transfers and costs. The costs considered in each category are listed in the chart on the next page.

State and Local Revenue Sources, Cash Transfers, In-Kind Transfers, and Criminal Justice System Expenditures Impacted by High School Dropouts in the Commonwealth

State Taxes	Cash Transfer Payments	In-Kind Transfers	Incarceration Costs
State personal income taxes	Temporary Assistance to Needy Families (TANF)	Medicaid Expenditures	Jail/Prison Costs
State sales taxes	Emergency Assistance to the Elderly, Disabled, and Children (EAEDC)	Public Housing Subsidies*	Probation/Parole Costs*
Unemployment insurance and workers' compensation taxes	Supplemental Security Income for the Aged and Disabled (SSI)	Child Care Subsidies for Low Income and TANF Recipients	
Above Three State Taxes Combined	Unemployment Insurance Benefits		
Local property taxes		Housing Shelters*	

Note: (*) Specific estimates of these costs are not included in this paper due to an inability to obtain data on the educational attainment of the recipients of these services.

- **Using a variety of sources and the calculations outlined in Sections A-D above, the specific annual cost to the Commonwealth for each dropout on average was calculated.**
- **That cost—the mean annual difference between the net fiscal contributions of high school graduates and high school dropouts—was about \$3,080.**
 - Massachusetts high school dropouts imposed \$1,567 more in cash and in-kind transfers and incarceration costs than they paid in state and local taxes.
 - In sharp contrast, high school graduates paid \$1,513 more in state and local taxes than they received in transfers or imposed in incarceration costs on state and local government.
- **Over the 47-year working-age lifetime, the fiscal cost to state and local governments of each dropout (on average) would equal nearly \$145,000.**
- **The gap between high school dropouts and bachelor degree holders would exceed \$330,000, as charted on the next page.**
- **The explanations and calculations show that there is an opportunity to have a profoundly positive impact on the Commonwealth's budget by significantly reducing the dropout rate.**

Annual Net Fiscal Impact on the Commonwealth's Budget of
Massachusetts Adults (18-64 Years of Age) by Level of Education Attainment

