Improving the Post-Secondary Graduation Results for Low-Income Students

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Introduction.

America has long been a world leader in primary and secondary education, as well as in college education. The rising level of US education at the high school level during the first half of the 20th century had a great impact on the decline of inequality and drop in poverty in the decades past World War II (Card, Dominisoru and Taylor 2018). From 1960 to 2017, the number of Americans over age 25 who had graduated from high school increased from 41.1% to 90% and, blacks from 21.7% to 87%. The number of non-Hispanic whites over 25 who had graduated from college with a bachelor's degree or more increased from 8.1% to 37.2%, and blacks from 3.5% to 23.9%. Hispanic college graduates increased from 7.6% in 1980 to 17.3% in 2017 (National Center for Educational Statistics 2018). (See table 1.) This represents a substantial national achievement. As late as 2012, the US was ranked fourth among advanced nations for persons 25 to 65 who had attained any post-secondary education (NCES table 603.20). In 2017, some 76 million Americans had attained a Bachelor of Arts or higher and 58 million had some college. Only 22 million had no high school diploma and 62 million had a high school degree only (Fontenot, others 2018). As a result of this high level of education, the nation has prospered and we still have the largest Gross Domestic Product per person of any large nation.

In spite of progress made, the changes in technology and demands for educated labor have outpaced educational gains. At the same time as millions of Americans are not working (either unemployed or given up looking for work), typically there are six million jobs which have not been filled. The percent of small businesses who say that they have a hard time getting qualified workers has hit a seven year high (Malanga 2017). One estimate is that over the next 20 years, 47 million jobs will be created, two thirds of which will require a post-secondary degree (Foroohar 2014). In addition, other nations are making greater advances in graduation from college. The 25 to 34 year olds in 12 advanced OECD countries have a percent with a college degree greater than in the US (OECD 2018).

The problem in higher education is not with the children of educated parents. Their post-secondary graduation rates are high. The problem is with under-represented minorities and children from poor and low-income families. They are seeking higher education, but are often not prepared for college and do not graduate. Community colleges, which attract the highest percent of lower-income students, get 45% of all post-secondary enrollment, but barely more than a third emerge with a degree or certificate within six years (Hulbert 2014). The National Center for Educational Statistics found that college graduation rates among students in 2012 from the lowest income quartile was 13%, compared to 60% of students from families with higher socio-economic status. In 2015, the top two quartile students earned 77% of bachelor's degrees and the bottom quartile of students only 20% (Zinhteyn 2016). The graduation rates for first time, full-time students from for-profit four-year institutions was only 26%, for open-admission four year colleges 32%, compared to 88% for the most competitive colleges. Non-competitive schools get a bulk of low-income students and competitive non-profit colleges only a few. The graduation rate for black students for cohorts starting college in 2010 in non-
profit private schools was 43%, 40% for four year public college, and only 18% for for-profit schools (NCES 2017). Overall, the six year graduation rates for those starting college in 2010 was 40% for blacks and American Indians. This does not count transfer and part time students. (see Table 2.) Typically, the graduation rate for black students is over 20% lower than for white students, reflecting the lower income and education and family status of the black community (Chiles 2017). Thirty years ago there was a 31 percentage point differential in the graduation rates of the poor and the rich; now the gap is 45 percentage points (De Parle 2012). Only half of those who receive federal Pell grants graduate their four year programs within six years (Favero 2018). Isabel Sawhill writes that “the US has put all of its eggs in the one college basket, neglecting training for careers, left the bottom half stranded, and fallen behind other industrial countries in the process” (Sawhill 2018a, p 111).

The problem is that many low-income students are not prepared to attend college, nor are they equipped with the necessary skills to secure a career (Lanford, Maruco, and Tierney 2015). The "Bachelor or bust" mentality has left many students dropping out of college, with no degree, no work skills and no work experience, plus a large amount of debt (Petrelli 2016).

The gap in educational attainment between high- and low-income students and between white and under-represented minority students is tied in with critical problems facing the country. Increasing low-income post-secondary graduation rates would help mitigate these problems. The problems are:

- Incomes have been virtually stagnant in inflation-adjusted dollars for the bottom 90% of Americans since 2000. Income is up five percent, but the GDP has grown 30% (Leonardt 2018).
- At the same time, inequality of income and wealth has grown dramatically since the 1970s, after dropping from World War II. The bottom 50% of the population earns only 13% of the income, less than the top one percent, with 20%. The US is second internationally in the percent of income of the top 10% (47%). Typically in Europe, the top 10% earn 37% of income (Alverado, others 2018). Our current higher education system is a major contributor to inequality: the rich get the best schools and the poor are most often left behind with no degree.
- We pride ourselves as being the land of opportunity, but only half of those born in the 1980s surpassed their parents' income. By contrast, most born in the 40s were better off than their parents at the same age in inflation-adjusted dollars. The chance of moving from the bottom income group to the top is 7% in the US but 13.5% in Canada (Reeves and Krause 2018).
- We have the highest "relative poverty" (60% of median income) of 16 European states and highest rate of absolute poverty of Northern European countries (Notten and Neubourg 2007).
- A major reason we have such high poverty is that 63% of working age poor (by official poverty definition) are not working at all (Fontenot, Semega and Kollar 2018). Many of those not working are early retirees, caregivers, in school, or handicapped. But those who have less education have difficulty finding work in today's economy. A majority of the poor are either black or Hispanic. The labor force participation by blacks with no high school diploma is 37.5%, high school (58.8%), some college (68.7%), and college graduate (77%). Only 46.7% of whites with no high school degree are in the workforce as are 56% of those with a high school degree (National Urban League 2016).
Plainly, progress has been made in American education but it has been outpaced by changing workplace demands. Never before has higher education in all of its forms—BAs, associate degrees, certificates, job retraining—mattered more for Americans.

Addressing the graduation shortfall for low-income and minority students is difficult since it is imbedded in the fact that we, as a nation, have tolerated high poverty and inequality. This paper offers some suggestions to make a start in addressing the problem, including more focus on Career and Technical Education (CTE) for those students not ready for academic college education, improved funding of colleges to improve counseling and tutoring, and paying more attention to getting low-income students through college rather relying primarily on Pell grants to finance that schooling.

The problem of improved post-secondary graduation rates for low-income students is tied in with the other problems of our society: high poverty and inequality, the breakdown of the American family, reducing workforce participation among men, and high crime and incarceration. The impact of changes in education is shown in part III below. In summary, increased education for an individual and the nation means lower poverty, more stable families with fewer single-parent households, increased workforce participation, and lower incidence of violent crime.

The paper is broken down into six parts

I. Statement of the Problem: Achievements and Problems with American Education. (p.4)

II. Factors Influencing Positive and Negative Trends in American Education. (p. 13)

III. Consequences of Individual Education Attainment. (p. 18)

IV. What Works and Doesn't Work in Improving Post-Secondary Educational Outcomes. (p. 22)

V. Recommendations by Experts. (p.28)

VI. Conclusions and Recommendations: What Should be Done? (p. 31)

I. Statement of the Problem: Achievements and Problems with American Education.

There are both substantial achievements in US education as well as problems to be addressed. For this paper, education includes (a) primary and secondary schools, (b) post-secondary higher education with two-year, four year, or post-BA degrees, (c) career and technical education at high school or post-high school which may or may not involve a degree, but a license or certification, (c) active labor market policies which involve employment services, job search and job training programs (d) employee sponsored training including apprenticeships, and (e) life-long learning.

a. Summary of Achievements

As suggested in the introduction, there have been substantial gains in both primary and secondary education in the US. Table 1 shows these remarkable gains. There has been an increase of over 49% in high school graduates over age 25 from 1960 to 2017. Even more remarkable have been
gains by black students who had been shut out of quality education for hundreds of years. The number of backs over 25 who had graduated from high school increased from 21.7% to 87%. It is hard to imagine that only 21.7% of blacks over 25 had graduated from high school in 1960. By 2017, it was 87%, higher than graduation rates of white students in 1990.

Those Americans over 25 achieving a bachelor's degree or higher also increased dramatically from 7.7% in 1960 to 34% in 2017. Only 3.5% of blacks over age 25 had a BA in 1960 compared to 23% in 2017. Hispanic rates increased but, as with high school graduations, were far behind other groups because of the in-migration of millions of less educated Hispanics from Mexico and South America over the past 40 years. The combined total of those who had a BA in 2017 and some college was 134 million, 62% of the adult population (Fontenot, others 2018). Although having some college is not as valuable as having a college degree, it still counts for higher life-time earnings and lower poverty and unemployment. Although other advanced nations are gaining on us in post-secondary graduation rates, the graduation rate for men and women in the US is still above the OECD average, with nine countries having higher rates for men and seven for women (OECD 2017).

Table 1. Education Attainment of Americans age 25 and Over from 1960 to 2017, by Race/Ethnicity (in percent)

<table>
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<tr>
<td><strong>Total high school grad</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>43.2</td>
<td>57.4</td>
<td>71.9</td>
<td>81.4</td>
<td>88.4</td>
<td>92.1</td>
<td>93.3</td>
<td>94%</td>
</tr>
<tr>
<td>Black</td>
<td>21.7</td>
<td>36.1</td>
<td>51.4</td>
<td>66.2</td>
<td>78.9</td>
<td>84.6</td>
<td>87.7</td>
<td>87%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>44.5</td>
<td>50.8</td>
<td>57</td>
<td>62.9</td>
<td>66.7</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total bachelor's degree or more</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>8.1</td>
<td>11.6</td>
<td>18.4</td>
<td>23.1</td>
<td>26.1</td>
<td>33.2</td>
<td>36.2</td>
<td>37.2</td>
</tr>
<tr>
<td>Black</td>
<td>3.5</td>
<td>6.1</td>
<td>7.9</td>
<td>11.3</td>
<td>16.6</td>
<td>20</td>
<td>22.9</td>
<td>23.9</td>
</tr>
<tr>
<td>Hispanic</td>
<td>7.6</td>
<td>9.2</td>
<td>10.6</td>
<td>13.9</td>
<td>15.5</td>
<td>17.3</td>
<td></td>
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</tr>
</tbody>
</table>


1. **Successes in primary and secondary education.** A critical determinant of success in college is the quality of the primary and secondary educational systems. Vocal critics of American public education, who want to move from public education to private education with vouchers, argue that our primary and secondary education is a failure, citing some negative international test-score comparisons. We do have many problems, cited in section (b) below, but we also have a number of successes, ignored by critics. A short list of these successes is as follows:

- High school graduation rates are at an all-time high.
Conversely, high school dropout rates have plummeted. Persons ages 18 to 24 who had not completed high school and are not enrolled in school dropped from 14.8% in 1980 to 6.4% in 2015. The dropout rate for black students declined from 23.5% to 7.7% and for Hispanic students from 40.3% to 10.4% (Proquest 2018).

Proficiency scores in both math and reading have increased in the 4th and 8th grades over the past decades. Between 1992 and 2015, 4th grade math scores increased by 28 points for whites, 36 for blacks and 30 for Hispanics. At grade four, the black/white gap in reading dropped from 32 points in 1992 to 26 in 2015; the black/white gap in math dropped from 32 in 1992 to 24 in 2015 (Musu-Gilette 2016).

Seventy percent of children graduating from high school enroll in college—46% in four year and 24% in two year institutions. Eighty-three percent of high school graduates from high-income families and 67% from low-income families enroll in college. The number of low-income students who have enrolled in college has increased by 16% since 1990 (Mishory 2018a). The increase in enrollment involves all racial and ethnic groups. The number of black men in post-secondary education increased from 717,491 in 2000 to 1.3 million in 2010 (American Council on Education 2012). Overall, college enrollment has increased by 138% over the past 40 years (Odland 2012).

On a number of international test scores, US fourth grade students ranked among the top 10 full countries in reading and math. US students ranked considerably lower in 8th grade math (McFarland others 2018).

OECD data show that the US has the third lowest percent with less than a high school degree of 29 countries (OECD 2018).

2. Positive achievements in higher education. The focus of this paper is on problems: the low college graduation rate of low-income and under-represented minority students. However, there are many achievements in higher education in US which need to be considered in developing public policy.

As indicated above, higher education has not lost its appeal to students and parents who send them. From 2000 to 2016 undergraduate enrollment increased from 13.2 million to 16.9 million in degree granting institutions. The number of BA's awarded increased from 1.2 million in 2000 to 1.9 million in 2018. In addition, there were 939,000 certificates below the associate's level and one million Associate of Arts awarded (McFarland, others 2018). Fifty one percent of the degrees were awarded at the sub-baccalaureate level.

The ethnic and racial composition in colleges as changed dramatically. In 1980, 89% of all bachelor's degrees were awarded to non-Hispanic white students and only two percent to blacks and Hispanics. By 2013, only 69% were awarded to white students, but 11% went to both black and Hispanic student and seven percent to Asians. This progress is encouraging.

Over eight million students were seeking sub-baccalaureate certificates or degrees in 2011-12. The number of students earning sub-baccalaureate certificates or degrees increased 71% from 2002 to 2013, compared to a 54% increase for all undergraduate awards (US DOE 2014).
A success story in college is by women, particularly black women. Black women earn two-thirds of bachelor's degrees earned by black students, as well as 70% of master's degrees and 60% of doctorates. Sixty-three percent of black enrollments in college are women (Journal of Blacks in Higher Education 2006). This is significant in that the black women were raised in the same families and the same neighborhoods and were educated in the same highly segregated schools (by race and class) as the black men. Table 2 shows that females graduate at a higher rate than males in both four-year and two-year institutions, as well as in public and non-profit four-year institutions. In 2017, there were 24 million women over 25 who had a BA compared to 21.9 million men (US Census. 2018 Current population Survey 2017). The graduation rate for both men and women increased over a 10 year period by about the same amount, but the rate for black females gained little (NCES 2017).

International comparisons of college attendance and graduation rates are somewhat misleading since the quality and type of higher education varies considerably by country. The US is blessed with a large number of top universities in the world. The Center for World University Rankings, listed 33 American Universities in the top 50 in the world. Only two non-American universities (Oxford and Cambridge) were listed in the top 10 (CWUR 2018).


In 2016 an estimated 27% of people (54 million) reported that they had a non-degree credential. Many also had a college degree (Conen, McQuiggan, and Isenberg 2018). In 2017, 10.6 million people had an Associate of Arts in vocational subjects, less than the 12.6 million with an associate's degree in academic disciplines (US Census 2017). A total of 1.4 million sub-baccalaureate occupational credentials were awarded in 2015—38% of all undergraduate credentials awarded (Hudson 2018).

Adult life-long learning is neglected subject: 59% of US adults participate in formal or informal education, well above the OECD average of 49%. Only five countries have a higher rate (OECD 2018). This adult education often is not occupationally related and does not involve receiving a degree of certificate.

b. Problems with American education

1. Primary and secondary problems. In spite of achievements in primary and secondary education in the US cited above, it faces many problems. Many of these problems relate not so much as deficiencies in the schools, but the failure of the US to reduce poverty and inequality to a level reached in Western Europe and other advanced nations. Also it is due to the fact that we have among the highest minority and foreign-born populations among advanced nations.

Gaps in achievement by race and income. In spite of progress made, there still is a large gap between under-represented minority students and white and Asian students. Sean Reardon found that the gap in scores between high-income and low-income students over the past 25 years has increased by 40%, although gaps between racial and ethnic groups have dropped. The SAT gap between the rich and the poor is 125, twice as wide at the 70 point black/white gap. It is not that the scores of the poor
are declining, but the scores of the rich children are increasing. In the 80s, the rich/poor gap was 90 (Reardon 2013). Twenty percent of the low-income students drop out of high school, five times as likely as higher-income students (Rumberger 2013). In 2017, 12.7% of blacks had no high school education, more than double the non-Hispanic white percentage of 5.8 (US Census 2018 table 3).

**Lack of college readiness.** Although high school graduation rates have increased and dropouts decreased, a large number of students (particularly low-income and minority students) are simply not prepared for college. Studies vary in their estimate of those high school students not ready for college. One study found that only 32% of students leave high school prepared for college. College readiness, as defined by the ACT College Readiness Benchmark varies by subject matter, race, state and income (ACT 2007). At least 20% of colleges place more than half of low-income students in at least one remedial course. In 2014/15 there were over 460,000 students in college remedial classes (Butrymowicz 2017). It will be shown in section IV that these remedial classes are not very effective. Sixty percent of blacks and Hispanics and more than half of low-income students in high-performing Massachusetts schools are enrolled in at least one remedial course (Conaway). The problem often is that high school curricula are poorly aligned with college requirements. Before, high school graduates were able to get decent jobs and did not seek to enroll in college.

**The gender gap in primary and secondary school.** In the previous section, the achievements of women, particularly black women, were represented as a success. The obverse finding is that black boys, and boys in general, lag in their school performance. In none of the 10,000 districts studied by an analysis of high school gender achievement did boys, on average, do as well as girls in English and language arts. (Miller and Quealy 2018). This gap applies also in the OECD countries, where primary and secondary female students outperform males in reading (OCED 2017).

**US lagging in pre-school attendance.** Denmark spends 1.3% of GDP on early childhood education, the OECD average is .65% of GDP, and the US spends only .2% of GDP (Economist 2019).

2. **Problems with post-secondary education.**

In spite of achievements in higher education in the US described in section 1 above, there are a number of serious problems with post-secondary education in the US. They include, low college graduation rates for low-income and under-represented minorities, the gap in enrollment and graduation between males and females (both black and white), variation in graduation rate by state, the time taken for those students who do graduate, the black/white gap in graduation, and the crushing debt load for many students (especially for those who do not graduate). There are many problems with career and technical education, including comparative low training effort by industry and drop in funding for career-oriented education. National labor market programs are also lagging in the US which train workers who are by-passed in changing technology.

**Low-income college problem.** There is a big gap in college graduation rates between students from low-income families and higher-income families. Data are not regularly collected on graduation by income of parents. A surrogate for low-income is receipt of a Pell Grant. Low-income students are heavily enrolled in community colleges, for-profit, and non-competitive colleges. Estimates vary by
different study. According to one estimate, 14% of students from low-income families who entered college in 2000 graduated from four-year college in six years, compared to 60% of higher income students (Aston 2018). Other estimates are as low as 10%. Because community colleges have a higher percent of lower-income students and lack support funds for students, only about a third of community college students get any sort of degree through transfers to four year colleges or an Associate of Arts degree. Isabel Sawhill states that 54% of community college students don’t get a degree, receive a certificate or transfer to four-year colleges (Sawhill 2013). This is important, since 45% of all post-secondary enrollment is in community colleges.

As shown in Table 2, only 32% of students in the least competitive colleges receive a degree compared to 88% for the most competitive colleges. In competitive colleges, fewer than 25% of applicants are accepted. As shown in later sections, elite colleges have a very good graduation rates for Pell grant and other low-come students (Zinshteyn 2016).

Table 2. US College Graduation Rate in 150% of Normal Time by Race, Ethnicity and Type of Institution for first-time, full-time Students (in percent).

<table>
<thead>
<tr>
<th></th>
<th>Total 4 Year</th>
<th>Public</th>
<th>Non Profit</th>
<th>For profit</th>
<th>most competitive colleges</th>
<th>least-competitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>60%</td>
<td>59%</td>
<td>66%</td>
<td>26%</td>
<td>88%</td>
<td>32%</td>
</tr>
<tr>
<td>Females</td>
<td>63%</td>
<td>62%</td>
<td>68%</td>
<td>23%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black males</td>
<td>34%</td>
<td>35%</td>
<td>38%</td>
<td>19%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black females</td>
<td>43%</td>
<td>44%</td>
<td>48%</td>
<td>17%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low- income</td>
<td>9-14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High income</td>
<td>60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>63%</td>
<td>62%</td>
<td>69%</td>
<td>34%</td>
<td>90%</td>
<td>40%</td>
</tr>
<tr>
<td>Black</td>
<td>40%</td>
<td>40%</td>
<td>43%</td>
<td>18%</td>
<td>71%</td>
<td>19%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>54%</td>
<td>53%</td>
<td>61%</td>
<td>29%</td>
<td>81%</td>
<td>30%</td>
</tr>
<tr>
<td>Asians</td>
<td>74%</td>
<td>72%</td>
<td>79%</td>
<td>48%</td>
<td>93%</td>
<td>42%</td>
</tr>
<tr>
<td>Total two year</td>
<td>30%</td>
<td>24%</td>
<td>60%</td>
<td>60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td>28%</td>
<td>23%</td>
<td>56%</td>
<td>57%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td>33%</td>
<td>24%</td>
<td>61%</td>
<td>61%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black males</td>
<td>19%</td>
<td>13%</td>
<td>38%</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black females</td>
<td>26%</td>
<td>14%</td>
<td>53%</td>
<td>49%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The lower graduation rates for low-income students apply regardless of test scores. Fewer than 30% of students in the bottom income quartile even enroll in four-year colleges and fewer than half of those go on to graduate. Only 26% of 8th graders with below-average incomes, but above average test scores, earn a BA, compared to 30% of upper income students with sub-par test scores.

Graduation rates are highest for non-profit colleges for whites, blacks, Hispanics, and other students as shown on table 2, followed by public four-year colleges and universities. The graduation rates for students in four year for-profit colleges in 2010 ranged from 18% for blacks to 48% for Asians. Rates for two year non-profits are considerably higher.

Only about 50% of Pell grant recipients graduate from college. Students who are most likely to receive Pell grants are more than three times as likely to attend for-profit institutions as those who don't receive the grants. For-profit colleges have the worst record of any group for four year programs, but their two year record is comparable to non-profits.

The problem of low college graduation rates is not unique to the US. On average only 21% of students graduate from college in OECD countries whose parents have less than high school education. By contrast 60% of students with one parent with a college degree graduated from college. Graduation rates for racial and ethnic minorities are lower in Europe, as in the US (OECD 2018).

**College gender gap.** The male/female gap in performance in primary and secondary school carries over to college. In 1970, 58% of undergraduates in four year colleges were men. By 2014, that had fallen to 43% (Hochschild 2018). Men who enrolled in colleges have a higher dropout rate and lower graduation rates than women. This applies to the US as well as to the OECD. OECD data shows a 55% graduation rate for women and 45% for men (OECD 2017). In 2017, 30% of US men ages 25 to 29 had a BA degree, compared to 39% of women. The graduation gap has increased since 2000. The US female four-year college graduation rate was 63% v. 57% for males. (See Table 2.) The gap in two-year and four-year college graduation is even greater for black women, compared to black men. There is a nine point spread between four-year college graduation rates of black men and black women and a seven percent gap between graduation rates of black men and women for two year institutions.

**Variation in achievement by state.** Another problem in US higher education is that there is an enormous difference in graduation rates by state. There is a great variation in expenditures for higher education by state as well as in percent minority, income distribution, and educational attainment by primary and secondary schools. Delaware, Iowa, Washington, Virginia, New Jersey, and New Hampshire have college graduation rates of over 65%. Kentucky, Tennessee, Oklahoma, Nevada, and New Mexico have the lowest college graduation rates. They range from only 38.7% to 46.9% (O'Shaunessy 2012).

**Too many years to graduate.** It takes too long for the average college student to obtain an Associate's or Bachelor's Degree. Because of time required, most data show BA graduation rate in six years and an Associate of Arts in three years. In California, the average time for obtaining a BA is 4.7 years. The cost of this additional time is collectively $222 million more in tuition than if students had finished on time. (Ross and National Journal 2014). Most colleges accept anyone who applies, regardless of their capacity to earn a college degree. There are 600 college "failure factories", where the
The graduation rate is less than a third of students within six years (Schneider and Clark 2018). The four year graduation rate for US students is only 41% overall, 50% for Asians, 32% for Hispanics and only 21% for black students (NCES 2018 Fast facts).

**Black-white gap.** Typically there is over a 20% gap between black and white graduation rate for four year colleges, public, non-profit and for-profit. For the least competitive or open schools, black graduation is only 19%. (See table 2.) The graduation rate for black males is particularly low, even lower than back females. The problem is that most blacks and Hispanics go to the least competitive colleges where graduation rates are very low and more black students have lower incomes than white. Hispanic graduate rates usually fall between white and black rates; however, the Hispanic college four year college graduation rates increased by 8% between cohorts starting in 1995 and 2010, and blacks improved only one percent (NCES 2018a). Unfortunately, children of black parents with BA's have a lower graduation rate than children of white parents with the same education (Atewell 2004). As a result, 30% of children of black middle income parents drop to a lower income group (Brown 2016).

**Overall graduation rate.** The six-year overall college graduation rate in the US (60%) is considerably below that of most European colleges. The completion rate for higher education runs from a high of 81% in Denmark in 2011 to low of 53% in Sweden. The dropout rate in France is high because few are rejected from college. The number of "early leavers" from higher education and training in Europe has dropped from 17% in 2002 to on 10% in 2017 (Eurostat, Europe 2020 indicators)

**A note on graduation data.** It should be noted that the data cited in this study in Table 2 do not include transfers or part-time students, nor does the data count students who took more than six years to graduate from a four year program. When another method of counting is used that includes both transfer and part-time students, the white four year graduation rate goes to 67% for public universities compared to 62% using the more restricted definition and black graduation is 46% rather than 40%. In addition, at the end of the six year period many students are still enrolled in college: 17.4% of black students and 29% of Hispanic students are still enrolled and some may graduate (Shapiro 2017).

**Crushing debt loads.** Not only do a majority of low-income and minority students fail to earn a degree, but they often have a crushing debt in college loans. Regardless of income, some 44 million Americans have $1.4 trillion in student loans outstanding, up from $800 million in 2008. For students with a BA, the average debt is $30,000. There is also parental debt (Hess 2017). There is an inverse correlation between ability to pay and percent with student debt burdens. Seventy-nine percent of those in the bottom quartile of family incomes have student loans, compared to 55% of the top quartile. Although public colleges are subsidized by billions of dollars of State funds, the average debt incurred by a bachelor's degree completer grew from $12,226 to $26,800 in 2017 (Mitchell, Leachman, and Masterson 2017). The black student debt burden is particularly high: over $50,000 compared to $28,000 for white students (Reeves and Mathew 2016). Other sources show lower black debt.

A combination of high student debt and failure to attain a college degree has resulted in increasing default rates in 2016: 8.5% of debtors who went to non-profit colleges were in default, as were 13.5% of public college students, and 24.9% of students who went to for-profit colleges. Twenty
one percent of black students defaulted within 2 years after graduation. 8.9 million federal loan recipients were in default in 2017. Pell grant students had higher debt than their higher income peers, in spite of the grants which did not have to be repaid. They are five times as likely to default (11% v. 2%) (Institute for College Access and Success 2018). Low-income students who did not graduate also have high student debt. They would have been better off getting a job after high school.

3. **Problems with Career and Technical Education.**

One of the major reasons for low college graduation rates, compared to European countries, is that we do not enroll as many students in Career Technical Education (CTE) as they do. In 2012, we had only 348,000 active apprenticeships with 21,000 business partnerships. By contrast in Germany there were 1.8 million students in apprenticeships in 50,000 companies. Typically, in Europe 60% to 70% of students have on-the-job training (Malanga 2017). Close to half of all high school students in the group of 28 EU countries followed vocational programs, including 54% of males (Eurostat, Vocational training).

In the US, only 37% of students seeking an associate's degree in CTE had received a certificate within six years, 39% for all sub-baccalaureate programs, 67% for baccalaureate degrees and 64% in career fields (US Department of Education 2014).

Because of lagging graduation from community colleges and low apprenticeships compared to Europe, many Americans do not have the right set of skills to get and retain a good job. An international survey concluded that 35 million American adults had a low skill level, threatening their ability to get a self-sufficient wage (Bird, Foster, and Ganzglass 2014).

Although a large number of people have licenses and non-degree certifications (cited above), they are not evenly distributed by race, income, or education. Only seven percent of those with less than a high school diploma had work credentials and seven percent with a certificate. Only 17% with high school degree had any non-degree credential, but 31% with a BA and 49% with a graduate or professional degree. Only 19% of those earning less than $20,000 had a credential and 41% of those earning over $50,000. Only 12% of blacks and Hispanics had work credentials. (Cronen, McQuiggan and Isenberg 2018). The amount of US funding for career and technical education in high school has dropped substantially to $1 billion. High school graduates do not have the skills needed for a high-tech economy.

4. **National Labor Policies.**

**Lag in labor market programs and policies.** The amount of active labor market activities, which include manpower training, job search and employment services, can be shown by the amount of funding. The Council of Economic Advisers reported that the current level of investment in active labor market policies and program is low by both national and international historic standards. The US spends less than half of what it did on such programs as a percent of GDP 30 years ago. Expenditures dropped form 2.4% of GDP in 1985 to .12 in 2014. (Council of Economic Advisors 2016). To reach OECD average experience, we would have to increase spending five-fold (to $90 billion) (Sawhill 2018a). We are only spending $10 billion in targeted labor market activities. Our expenditures are third lowest in the OECD (Nunn, O'Donnel, and Shambaugh 2018).
There is evidence that retraining has been inadequate for workers with less than high school education. Although national unemployment is low at 3.6%, the faction of prime age males with a high school diploma or less not in the labor force has increased from 3% in 1964 to 17% in 2015. For prime age men with a college education, those not in the labor force has increased from two to six percent (Council of Economic Advisers 2016). There is a growing number of discouraged workers with low skills and low educational achievement who have given up looking for work.

5. **Lag in training by employers.** In 1996, 20% of US workers received some training sponsored by employers; by 2008 it was down to 11%. In 1996 on-the-job-training helped 12% of workers; in 2008 it was down to seven percent. Most job growth has come from short-term or project-based work, causing employers to reduce training and education aid (Council of Economic Advisors 2016). By contrast, over 70% of the enterprises in the European Union provided career and vocation training.

II  **Factors Influencing Positive and Negative Trends in American Education.**

To find solutions to problems, it is necessary to understand root causes of these problems. The challenge, in the case of US educational attainment, is to understand the causes of both positive and negative trends. We must build on the positives and seek to deal with negative factor.

a. **Positive factors conditioning success**

Since this paper seeks to overcome problems, positive factors are summarizes only briefly:

- A positive trend accelerating both high school and college graduation are increased education and income of mothers. Children of higher income and educated mothers do better in school.
- A long term drop in poverty by children, when government aid is taken into account into account, has improved graduation of children.
- Later marriage and child- bearing has also improved educational prospects for children.
- Although we lag European longevity, the improved health of Americans should enable students to do better in school. The increased medical coverage for states which have joined the Affordable Care Act should continue to improve maternal and child health.
- Total public and private grants for higher education increased from $81 billion in 2008/9 to $122.7 billion in 2013/4. Federal Pell grants increased from $19.4 billion to $33 billion during this period. State aid to higher education increased from $362 per full time equivalent student in 2000 to $675 in 2017 (Selzer 2018), although there was some drop off in funding after the Great Recession. The US has the second highest government expenditures of advanced national for primary and secondary education and among the highest for secondary education (OECD 2017).
- Funding for primary and secondary education increased from $446 billion 2000/1 to $655 billion in 2015-16 in constant dollars and aid per student has gone up by over $7,000 during this period (Proquest 2018).
b. **Causes of negative education trends.**

Negative factors are divided into the following categories: (1) conditions in the neighborhood, income, and family outside the control of education, (2) developments in primary and secondary school, (3) developments related to college, and (4) factors relating to career and technical education.

1. **Family, income trends and neighborhood.**

   Some of the problems in American education are created by national problems:

   - The breakup of the American family is one of the most powerful negative factors affecting achievement of children in schools. Only 30% of black children have been raised with two parents, 57% of Hispanic children, 73% of white, and 82% of Asian children. A dominant effect of being raised by a single-parent household is poverty. Of the 47 million people living in female-headed households, 27.9% are in poverty (Fontenot, Semanga and Kollar 2018).

   - In 2016, there were 31.7 million children under 18 in families living in poverty. (McFarland others, 2018). There is a -.520 correlation between high school graduation and poverty (Baydu 2013). Another fundamental trend outside control of the schools is residential segregation both by race and social class. Twenty two percent of poor blacks and 17% of poor Hispanics live in high poverty neighborhoods with more than 40% poor.

   - Although median incomes are up over the long run, they have stagnated in inflation-adjusted dollars for the bottom 90% of the population since 2000. GDP growth far exceeds income growth (Leonardt 2018a). Net worth of households with children declined from 1989 to 2013, except for those in the top 10% (Gibson-Davis and Percheski 2018). In addition, the gap between net worth of black and white households has expanded dramatically. The median net worth of white households in 2016 with a BA was $400,000, but $44,000 for black households and $70,000 for Hispanics (Reeves and Guyot 2017). All of these trends in the past decade have made it more difficult for households to afford college costs.

2. **Primary and secondary education**

   In summary, among the negative factors affecting primary and secondary education are:

   - A consequence of residential segregation by race and class is that 77% of Hispanic and 73% of black students attend schools that are a majority of students of color. By contrast 88% of white student attend schools that are more than 50% white. Forty five percent of black and Hispanic students attend schools with over 75% of students receiving free and reduced lunch. Only 8% of whites and Asians attend schools with this poverty concentration. Nationally, high poverty districts spend 14% less per student than low-poverty districts.

   - Teachers in low-income schools often get lower salaries than those in higher-income schools and have higher turnover (US Commission in Civil rights 2018).
There are huge variations by state in funding primary and secondary education. In some northeast states, per pupil expenditures exceed $18,000, but in many southern and western states expenditures are below $6,000 (US Commission in Civil rights 2018). There is also a large gap in primary and secondary education funding that comes from the states, ranging from 28% in Illinois to 90% in Hawaii and Vermont (Chingos and Blagg 2017).

Even though they are well paid by international standards, US women sacrifice income by choosing education as a profession, considering the fact that there are now so many more career options for women than 30 years ago. Public school teachers receive 18.7% less than their similarly educated peers, down from 4.5% less in 1979 (Michel and Allegretto 2018). As a result, there has been a drop of 23% in the numbers of new teachers completing teacher training programs, and 17% leave the profession within five years (Reilly 2018). There has also been a decline in the percent of top-performing college students who go into education.

The drop in the percent non-Hispanic white students in primary and secondary schools from 59% in 2000 to 50% in 2013 has affected average test scores, since minorities (except Asians) have lower test scores (Mcfarland others 2018). In California and Texas, non-Hispanic whites are in a minority, as will be the case in four or five years nationally.

In 2014, there were 4.6 million English-language Learners in US schools. On average, they have lower test scores (Musu-Gilette, others 2016). From 1990 to 2016, the US Hispanic population grew from 22.6 million to 57.8 million and blacks from 29.4 to 43.3 million.

Often, high school curricula are poorly aligned with college success requirements and many students and parents lack good information on college financial assistance availability and career guidance (Bansal 2013). Few high schools meet national standards for counselor to student ratio.

3. Causes of graduation problems in higher education.

Increasing cost of higher education. A major barrier for low- and moderate-income students in the US is the huge cost of higher education—even for public four year colleges and universities and with Pell grants and other aids. The average annual tuition for in-state residents in public schools is $13,500, private non-profit ($26,200) and profit ($22,000). This does not include room, board and books. The cost of four year public universities has increased by 213% over 30 years (Martin 2017). State expenditures for higher education increased to $81 billion, but they are less than in 2009, in constant dollars. This increase in costs comes not from a big increase in faculty salaries. Administrative positions have increased at ten times the growth rates of tenured faculty (Campos 2015). After taking into account scholarships and grants, undergraduates in four-year colleges still have $22,000 of unmet need (Institute for College Access and Success 2018).

Total cost for living on campus at a public university (including tuition and living costs) at public university may be $34,700 a year, non-profit, $58,900, and for-profit $32,000. Two-year community college costs for those living on campus can be $17,400 and for those living at home, $9,000. Two-thirds of community college students work to support themselves (Collins 2017). The costs of higher education have risen faster than state aid. As a result the percent of education paid by students and
federal aid in public colleges increased from 25% to 47% since 1990 (Mishori 2018). Although costs at community colleges of lower, so are the incomes of many of their students.

For low-income students, the average amount of grant and scholarship from all sources for four year public colleges has been $10,600, leaving net costs to be paid of $9,500. Eight million students received Pell grants with a maximum of $5,825 per grant. This covers only 29% of average tuition, fees and board and room for in-state four year public colleges and universities. By contrast, in 1974, Pell grants covered 74% of college costs (Committee on Education and Workforce Democrats. 2018).

The average tuition in OECD countries is $2,634 and 75% of the students get financial aid where the tuitions are highest (OECD 2018). In many countries, college is free or at minimal cost. However, most Europeans have lower median incomes than Americans and pay much more in taxes. In a number of European countries, 50% of the GDP goes to government revenues. US citizens pay 34.5% of their income in taxes and the average German, 49.8% (Guthrie 2017). Although per capita expenditures for higher education are higher in the US, a much larger portion of that expenditure in Europe comes from the government than in the US. European government policies are more distributional. For this reason and as a result of a more generous social safety net, income inequality is lower in Europe than in the US.

Racial and ethnic composition of higher education. The changing composition of college students also has an impact on overall graduation rates. In 1970's only 14% of college students were students of color. By 2014, 30% were minorities. In the 1970's only 28% were adult learners. By 2014, 41% were enrolled (Committee on Education and Workforce Democrats). This may be considered an achievement, but with more low-income and minority students, overall graduation rates are reduced.

Part time college attendance. One problem is that a high percent of students are attending college only part time. In 2016, there were 6.4 million part-time students enrolled in degree granting institutions, and 10.4 million full- time students (McFarland, others 2018). Seventy seven percent of the 10.5 million undergraduates in four- year universities are full time, compared to only 39% of the five million undergraduates in two-year institutions. The major reason for attending part time is many students have to work because of family responsibilities. Only 21% of black students in college and 29% of Hispanic students were exclusively full time, as were 42% of non-Hispanic white students. Sixty percent of black students were “mixed”, in that they were part time occasionally. Over 40% of working college students have low incomes. The problem is that low-income students who work more than 15 hours a week get poorer grades and have lower graduation rates. Only 22% of low-income students who worked completed a BA in six years or less. Over 60% of black students who were exclusively full time graduated with a BA within six years and only 29% who were mixed or exclusively part –time graduated within six years (Shapiro, others 2017).

Low-income students avoid selective colleges. Another problem is that minority and low-income students go to less-selective colleges and universities which have lower graduation rates. Seventy- five percent of black and Latino men and women go to two-year or open admission schools outside of the top-ranked schools. More than half or poor children who have top scores on the SAT or ACT do not apply to more selective colleges (Bruni 2014). A major reason for low graduation rates of black students may be that they tend to go to colleges with low-graduation rates (Chiles 2017). Since
2008, 42% of poor students go to community colleges where public funding is lowest (Marcus and Hacker 2015). It was shown in table 2 that the graduation rates for least-competitive colleges is only 32%, while it is 88% for the most competitive. This is not just because non-competitive colleges have more low-income students. It will be shown that low-income students in competitive elite colleges have a 80-90% graduation rate (Smith-Barrow 2017). The reason for the high graduation rate is that these schools have more resources to help the students. Private universities spend five times as much per student as community colleges ($57,597 vs. $14,109) (Kahlenberg, others 2018). There is also a great discrepancy in spending among community colleges in the same state. Seventy-five percent of students in the 20 top rated colleges come from families in the top quartile in incomes (Bruni 2014). Elite colleges have only a small percent of students who receive Pell grants

The very fact that so many colleges are non-selective may encourage students who are not qualified for college to apply. This certainly applies to for-profit colleges which are more interested in getting Pell Grant money than in graduating students with a four-year degree. Their graduation rate is miserable. Only 11% of public four-year institutions accepted fewer than 50% of students and 75% of for-profit colleges are open admission. The problem with open admission colleges is that they produce many students with huge college debt and no college degree (McFarland 2018).

Problems of fairness of state aid. Many states provide compensatory grants to low-income primary and secondary schools, but do the opposite for higher education, with the focus on merit aid to students rather than need. Typically, colleges with a high percent of low-income students do not receive more state aid than elite colleges with a small number of these students. In addition, the federal government gives billions in grants to elite research universities with minimal enrollment of low-income students (Marcus and Hacker 2015). Non-competitive four-year and community colleges have relatively few advisors and counselors to help students (Hulbert 2014). Some 32 states provide a portion of their aid based on graduation rates. It will be shown that this ineffective because the gives the colleges an incentive to reduce the number of low-income students with lower graduation rates. (See Part IV)

Part-time faculty. A major reason that graduation rates are so low in less competitive public schools is that over the years more and more faculty are part time. In 2014, nearly half of college teachers were part time. Typically, they are less accessible to students, spent less time preparing for class and engaging with students. More competitive elite colleges have more full-time faculty.

More enrollment of low-income and other students in US. In 1972, 26% of low income high school graduates went on to attend college, 49% of low-income in 2000. It was 67% in 2016. Overall, 70% of graduating high school students go to college (NCES 2018). By comparison, a smaller percent of students participate in European higher education. In England and Italy it is only 43%, 39% in France and 42% in Germany (Sedghi and Allen 2012). It was reported early that a higher percent of lower income students in Europe follow a vocational path. This may be the major reason that European colleges in many countries have a higher retention rate. In 2000, in the US only four states had over 50% of their students who were low- or moderate-income in higher education; by 2013, there were 20 states. There are and estimated 5.5 million low-income students in college, 41% who received federal food assistance (Educational Trust 2019). Many are care-givers, have little savings, and have to work part-time.
Higher grades, less study. Another reason for the lower graduation rate of US college students is that, although their grades have moved upward, their time in study and classroom has declined from around 40 hours a week in 1962 to an average of just over 25 in 2003. The time spent in study alone by the students with educated fathers dropped from 25 hours in 1961 to 15 hours week in 2003; for those whose fathers had high school or below education, study time per week dropped from 23 hours to 13 hours. In 2003 those who worked less than 20 hours a week had only an hour less study than those who did not work. Low income students should require more study time (Brint 2018).

Poor teaching methods. In all of the literature reviewed for this study, only two sources suggested that poor teaching methods might be responsible for some of the poor graduation results. Steven Brint, in his just-published book on higher education, points out that the failure of colleges to attend to weaknesses in undergraduate teaching and learning can be considered the Achilles' heel of higher education. In medicine, doctors would be sued if they did not use the latest treatment methods, but not so college teachers. Many teachers use the old-fashion lecture technique will little student discussion and participation. (Brint 2018).

Lack of College Focus on Graduation Retention. Vincent Tinto, who has studied college retention for many years, charges that not enough colleges and universities take student retention seriously. Too few are willing to commit needed resources and address the deeper structural issues that affect student retention. These institutions do not align their reward systems toward the goal of enhanced student retention. Incentives for tenure and advancement are more oriented to the number of publications, not teaching. Colleges and universities are the only educational institutions that have faculty not trained to teach students. Rather, their training is in subject matter topics (Tinto 2006).

4. Problems with career and technical education and national labor policies.

Funding for Vocational and Technical education dropped from $2 billion in 2010 to $1.7 billion in 2014 (Proquest 2018). In 2009/10, Perkins grants per secondary school pupil for vocational education was only $29, or $48 for the highest poverty quartile (US Department of Education 2014). Many Career and Technical Education (CTE) programs are underfunded or not related to the needs of industry (Abamu 2017). Only 19% of high school students are concentrating in career and technical training with at least three CTE courses (Petrilli 2016). A problem is that vocational training has less support by parents and students than in prior years. Thus, parents push students into academic higher education even when they are not ready for this education. When I went to high school in California (class of 1950), 80% of the students were vocational and only 20% college track. When they finished high school they were ready to move on to blue collar trades.

III Consequences of Individual Education Attainment.

Labor force participation. Labor force participation is a critical index of national economic health. It is also called "employment rate" for prime age persons. A country can have low
unemployment rate (those not working but seeking work) at the same time as low workforce participation. Currently, the US has the lowest unemployment rate in 50 years (3.6%). However, many prime age men have dropped out of the workforce and have given up looking for work. Currently 11% of prime age men are not working—a considerable drop from 20 years ago (Mankiw 2018). The employment to population ratio varies by education. For example, as shown on table 3, in 2017 only 32.3% of blacks with no high school education were employed, 55.2% with a high school education only, 64% with some college, 75.3% with an associate's degree, and 76.8% with a bachelor's degree. One of the important lessons from these data is that having an Associate's degree or some college has a big impact on employment. Workers can benefit from some college education, even if they don't get a bachelor's degree. At every level of education, except with no high school diploma, black employment to population ratio was higher than that of whites. Employment to population ratio in 2017 for white workers having no high school diploma was 44.6%, high school only (54.6%), some college (60.0), and college (71.7%). This shows that education is the vital factor in unemployment. In spite of racial prejudice in hiring, education has a payoff for blacks (National Urban League 2016). The data for unemployment are parallel. In 2018, unemployment of Americans with a BA was only 2.2%, some college (3.2%), high school only (4.0%), and less than high school (5.5) (Cohen 2018). Rates for 2017 are shown in table 3 below. Black unemployment is higher than for white at every level of education.

In Europe in 2010, 64.3% of men and 46.9% of women with an "upper secondary" degree (equivalent of high school in the US) were working, as were 88% of men and 81.1% of women with "tertiary degree" (college completers) (OECD 2012. We had lower unemployment and lower workforce participation.

**Income and earnings.** While more education has a positive impact on employment status, it also has a positive impact on earnings. In 2016, median earnings of young adults with no high school were $24,000, high school only ($32,000), and a bachelor's degree ($50,000) (McFarland, others 2018). From 1991 to 2013, those with a BA increased their incomes from $68,845 to $73,446. Those with less education increased their incomes by only $1,000 (Wikipedia 2018a). Just earning an associate's degree has a life-time earning bonus of $246,000, or $13,000 higher annual earnings over a high school diploma (Kahlenberg 2018). The economic return of having only a high school education has diminished over the years. A graduate with a high school diploma earned 75% as much as college graduates in 1979, but that dropped to 53% in 2015 (Sawhill 2018a). Over a lifetime, It is probable that the impact of higher education on post-graduate income is overstated, since students who have graduated successfully are largely from parents who have higher income and education. This is demonstrated by the fact that students whose parents have incomes under 185% of poverty level earn 91% more over their careers than high school graduates of the same income, but those with family incomes over 185% of the poverty level earn 162% more over their careers. Thus, the only reason for higher earnings is not only educational attainment, but social and economic status of parents and intelligence (Hershbein 2016).

Those with a college degree could earn one million dollars more than those with only a high school diploma (Aston 2018). Table three shows the importance of getting a degree: in 2017, there was $6,000 gap earnings for those who had an Associate's degree and those with "some college but no degree."
It is probable that the impact of higher education on post-graduate income is overstated, since students who have graduated successfully are largely from parents who have higher income and education. Students whose parents have incomes under 185% of poverty level earn 91% more over their careers than those whose parents are high school graduates. Those with family incomes over 185% of the poverty level earn 162% more over their careers. The only reason for higher earnings is not only educational attainment, but economic status of parents (Hershbein 2016).

Table 3. Employment Status of Civilian Non-institutional Population 25 years and over by Educational Attainment, Sex, Race, and Hispanic or Latino Ethnicity 2014 and 2017

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<td>54.7</td>
<td>54.6</td>
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<td>60.0</td>
<td>67.9</td>
<td>71.7</td>
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Employment to Population ratio

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<tbody>
<tr>
<td>Total (percent)</td>
<td>9.0%</td>
<td>6.5%</td>
<td>6.0%</td>
<td>4.6%</td>
<td>6.0%</td>
<td>4.0%</td>
<td>4.5%</td>
<td>2.3%</td>
<td>3.2%</td>
<td>2.0%</td>
</tr>
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<td>6.1%</td>
<td>6.2%</td>
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<td>5.7%</td>
<td>3.9%</td>
<td>4.3%</td>
<td>3.1%</td>
<td>3.1%</td>
<td>2.2%</td>
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<td>7.2%</td>
<td>5.8%</td>
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| Income (2012)     | $21,384 | $32,630 | $33,749 | $40,085 | $66,159 |
| Income (2017)     | $30,180 | $49,970 | $55,560 | $64,771 | $91,772* |

**Intergeneration transmission of education and income.** The key determent of the success of children in college is the income and education of the family in which they are raised. Children of parents with college degrees have more support from parents, more tutoring and more college savings accounts and do better in school. This is even transmitted to grandchildren. Grandchildren of educated grandparents have more successful educational careers (Card, Domnisoru, and Taylor 2018).

**Race as a factor in income and upward mobility.** Although education is a critical factor in income, race also plays a big role. Black men raised by two parents together in the 90th percentile of incomes ($140,000 annually) earn about the same as white men raised by a single parent making $60,000 (Badger, others 2018). Only 2.5% of black children born in the bottom fifth make it to the top fifth of incomes, as compared with 20% of whites and 24.5% of Asians who are in the same income category. By contrast, black women, holding parents' income constant, actually out-perform white women in terms of individual earnings. However, overall, black women earn less. Black college dropouts earn less than white high school graduates (Shell 2018). Black men earn less than white men at every level of education.

**Poverty levels.** Using the Supplementary Poverty Measure, those with a less than a high school education have a poverty level of 28.7%, high school only (16%), some college (10.8%) , and with a BA or higher (6.6%) (Fox 2018). A major reason for the connection between education and poverty is that the major direct cause of a person's being poor is not working. Sixty-three percent of the poor, using the official poverty measure, were not working at all in 2017 (Fox 2018). As pointed out above, the lower the educational level, the higher percent not working (Raley, Sweeney and Wondra 2015).

**Participation in crime.** Education affects poverty and income; therefore, it has an indirect effect on criminal activities. Twenty-one percent of black men raised by those families in the bottom income category were incarcerated. Race is also a factor. Even those black men raised by top income families were as likely to be incarcerated as men raised by a white family earning $36,000 a year (Badger, others 2018). Violent crime is highest in high-poverty tracts and lowest in high-income tracts.

**Stable families.** People with college degrees marry later, have fewer divorces, more stable marriages and more successful children. Education is more important even than geography, although geography affects educational success. Seventy-two percent of white women with a BA ages 35 to 44 are married as are 52% of black women with the same education. Without a BA, 57% white women and only 27% of black women of this age group are married (Reeves and Guyot 2017). For 37% of the black families the wife is more educated than the husband, compared to only 17% of white families. A key factor in the low number of husband wife families among blacks is the low income and employment of black men with lower levels of education.

**Civic participation.** Not only does increased education improve employment and income prospects over a lifetime, it improves civic participation. Isabel Sawhill indicates that blue collar workers with high school only participate less in civic affairs than their more educated counterparts (Sawhill 2018a).
Career and technical education. Six years after graduation, CTE certificate or associate's degree holders were more likely to be employed than those with no sub-baccalaureate degree. Adults who receive a postsecondary certificate earn 20% more than those with no more than a high-school education, and adults who earn an associate's degree earn 44% more than those with no more than a high school education (Hudson 2018). To a great extent, the occupation of the certification or credential has an influence on life-time earnings. The areas with biggest growth in occupational credentials are health services and manufacturing, construction, repair and transportation. Earnings for technically trained workers are not as great as for college educated workers, but not all students are prepared to achieve a college degree but they enrolled in college and end up in debt with no degree.

IV What Works and Doesn't Work in Increasing Post-Secondary Educational Outcomes.

In order to devise sound public policy, decision-makers must have evidence about what works and doesn't work in what circumstances. What I have assembled here is a review of the literature on policies and programs seeking to improve graduation rates from post-secondary institutions and the finding by the authors about their effectiveness. Evidence suggests that among the successful interventions are pre-college programs to better prepare high schools for college, additional spending in college especially for student counseling, programs to identify students who have problems early so that help may be given, first-year leadership programs to help low-income student integrate with college life, job-based training and education programs, high quality career and technical education. Less successful are training for workers whose skills have become obsolete when training is not tied in with needs of industry. Ineffective programs are college remedial classes, state programs to reward colleges for overall graduation rates, and training for displaced workers and out-of-school students.

a. Success of pre-college remedial programs.

The premise of the efforts to enrich academic experience of high school students is that a major reason for failure in college is that most high school students who enroll in college are not really prepared enough for the rigors of college requirements.

- There is a body of research that shows significant positive educational outcomes for students who attend racially integrated schools (US Commission in Civil Rights 2018).
- Research also suggests that pre-college interventions can reduce the number of students who need college remediation by addressing academic and skills deficits (Barnette others 2012). For example, the Gateway to College National Network intervenes with students at risk of dropping out of high school by developing an academic plan that enables them to earn college credits. The organization currently operates at 41 colleges in 21 states (CFA staff 2017).
- Upward Bound, a $275 million federal program to increase the readiness of high school students for college, did not have any overall impact of post-secondary enrollment. But, researchers found that those who completed the full three year program had a higher college completion rate (37%) than those who were not enrolled in the program (Seftor, Marmun and Schirm 2009).
- The Quantway program that prepares students for success in college level math has been successful in that 25% of recipients of the program assistance went on to get an Associate of
Arts degree, compared to 18% of control group. Forty-six percent transferred to four year institutions (Norman 2017).

- Early college programs in high school have been successful in that most students in the program graduate from high school with some college credit (Collins 2017).
- Exposure to good teaching in both high school and college increases student likelihood of persisting and graduating (Wolniak, Flores, and Kemple 2016).
- The school racial climate can affect minority students' performance (Wolniak, Flores, and Kemple 2016).
- The Northern Virginia Community College works with 29 high schools in its Pathways to Baccalaureate program. College counselors are imbedded in high school and community colleges. 85% of the first four program cohorts went directly to post-secondary education. 90% of the students who enrolled in colleges were retained from the first to second semester (Northern Virginia Community College 2018).
- GEAR UP and TRIO talent search are federal programs that provide support to low-income, first generation school students. TRIO studies show that students in the program had higher high school retention and higher grade point averages (Muraskin, Lee, Wilner and Swail 2004).
- Students have more success when teachers are like them, by gender, ethnicity and race. Currently, 77% of the primary school teachers are women, up from 71% three decades ago. Eighty percent of these teachers are white, down from 87%. Black students with a black teacher are less likely to drop out of school and more likely to attend college. Teachers have higher expectations of students when they are like them (Miller 2018). The low number of male teachers in primary and secondary school may be related to the poorer performance of boys.
- California colleges and universities spending on high school outreach programs has increased from $8 million to $85 million after the affirmative action program was ended. Affirmative action offered preference to certain minority students (Perez-Pena 2013).
- The National College Advising Corps had a positive influence on college attendance among low-income students through a nation-wide consortium of advisers in underserved high schools (Wolniak, Flores, and Kemple 2016).

This brief list of policies the programs that increased high school success, as a prelude to college success, is by no means exhaustive. In my paper, "Brown V. Board of Education: 50 years later still separate and Equal" (Underhill 2011), I present a more comprehensive list.

b. Effects of Increased Spending on graduation achievement

One of the controversial areas in education is the impact of increased spending on educational outcomes. Conservative education writers, such as Eric Hanushek at Stanford University, have devoted much attention to the thesis that increased spending has not increased educational performance in high school. It isn’t that money doesn’t matter, but the critical issue is how you spend the money. By contrast, the literature reviewed for this paper relating to graduation from higher education is generally uniform in arguing that the increasing resources does improve educational outcomes.
It was reported in part II that a critical contributor to poor educational performance in high school has been that nationally high poverty districts spend 15% less per student than in low-poverty districts (Samuels 2016, US Commission in Civil rights 2018). If Hanushek is correct, achieving greater balance in educational spending would make little difference in education outcomes for low income students. But Alan Semuels cites a National Bureau of Economic Research study in arguing that a 20% increase in spending per pupil a year for poor children can lead to an additional year of completed education, 15% higher earnings and 20% reduction in the incidence of poverty, and 7.2% reduction in dropouts (Semuels 2016).

Andrew Card and his team looked at the "golden age of upward mobility" which was the greatest improvement in high school education in the US from 1900 to 1940. They found that spending more in high school to get more educated teachers and smaller classrooms yielded substantial improvement in upward mobility, particularly for blacks and students with least educated parents. In the 40s blacks received more education in California with higher teacher pay than whites in the South with low teacher pay. Also in the South in this period, black teachers received lower pay than white teachers (Card, Dominisoru and Taylor 2018).

By the same token, Bowman argues that providing more money to universities increases graduation rates. Also need-based aid helps low-income students complete college (Bowman, others 2017). John Muraskin and others looked at ten colleges with high-graduation rates and ten with low-rates. The median per pupil expenditure for high graduation colleges was $18,000, but only $12,000 for low graduation schools. The authors also found that financial aid had a positive effect on graduation from community colleges. Grants were related to college student persistence, but not loans (Muraskin, others 2004). Wolniak agrees that receiving grants and loans—particularly grants—have a positive impact on low-income students' persistence, credits earned and graduation rates. Black and Hispanic students benefit more than white students from such aid (Wolniak, Flores and Kemple 2018).

Deming argues that there is evidence that spending more for students in college, particularly on instruction and academic support services, increases early academic standing, course completions, grade point averages, and college completion (Deming 2018).

c. **Success of college-level interventions.**

- In their critical study of 10 colleges with higher graduation rates and 10 with low-graduation rates, Muraskin and his team found that there were a number of critical characteristics of colleges which had better graduation rates for low-income students: (a) intentional academic planning and academic review for those in trouble, (b) small classes, (c) most faculty teach full time, (d) strong support programs, such as tutoring, supplemental instruction and mastery classes, (e) location in small towns or rural areas, (f) having shared values and homogeneous cultures in the college, (f) having sought students most likely to succeed, and (g) and requiring students to live on campus (Muraskin, others 2004). Both the high graduation and low graduation rate groups of schools had a large number of low-income students.

- Another study found that features of successful low-income retention programs are strong pre-freshman year academic preparation, intensive advising process throughout the freshman year,
and group services with extended service hours, and efforts to build cohesion and belonging among low-income students (Thayer 2000).

- Advising and counseling by professionals can help students develop career goals. Extra tutoring, small class sizes, and intensive advising have a big payoff in community college success (Kahlenberg, others 2018). Wrap-around services providing holistic support are effective.

- The federal Student Support Services (SSS) program to increase support for low-income students had positive and statistically significant results. There were 198,940 students in the program in 2007. The SSS program is one of eight federally funded grant programs as part of TRIO. Two-thirds of students were low income (Chaney 2010).

- One success story for improved student advising and support comes from the City University in New York (CUNY) program, the Accelerated Study in Associate's program (ASAP). It provided more tutoring, reduced class size, and more advising at a cost of an extra $16,000 per student. Those students receiving ASAP help graduated at 51% with two year or four year degree, compared to 41% for those in the control group. Although it cost 60% more than the regular program, the cost per student graduate was less (Laura and John Arnold Foundation 2018).

- Elite and highly selective colleges have also had great success in graduating low-income students. At Harvard, more than half of their students born into families in the bottom fifth of the income spectrum reach the top 20% of earners after graduation (Mathews 2017). Their graduation rate is 80 to 90%, about the same as the total student body (Smith-Barrow 2017). That is the good news. The bad news is that only 4.5% of the Harvard Students and 4% of Stanford students came from the bottom fifth of family incomes in 2013. By contrast, 15% of Harvard students and 17% of Stanford students come from families in the top one percent, making over $630,000 a year. (Mathews 2017). But does this success rate come from the improved services of the universities or the fact that those low-income students are the best and brightest in their income category?

- The college pay for performance program is in some 32 states. The states pay colleges for the number of graduates, rather the number of students. The idea is that if colleges are rewarded for number graduated, rather than number of students, they would have an incentive to provide more help for students. The only problem is that this policy provided an incentive for colleges to reduce the number low-income students and "cream" the applicants. Research has found that this approach has had little impact on improving graduation (Mitchel, others 2018). I suggest in section VI that it may be more effective to reward colleges for graduation of low-income students.

- The Carnegie Math Pathways program seeks to improve courses in college math. Over the year the Pathway course has triple the success rate in half of the time that it takes for students in traditional math classes. Georgia State increased its graduation rates from 32% to 54% because of the program (Baron 2016).

- The remedial courses taken by many low-income and minority students are ineffective. Few pass them and go on to complete college. Only twenty percent of students in two-year colleges and 36% of four-year colleges complete remedial work in math and English and only 17%
ultimately graduate (Finn 2017). Seventy percent of students assigned to non-credit
development courses never complete college (Collins 2017).

- Having a large percent of full-time faculty has a positive impact on student achievement
  (Bowman, others 2017).
- Living on campus also has a positive impact on graduation from college, as does full-time
  attendance. The fact that millions of low-income students are attending college part time and
  most do not live on campus for community colleges may help explain the poor graduation rate
  from community colleges.
- The University of Texas at Austin has a university leadership network, a program of support for
  at-risk students by providing a four year program of leadership training and community and
  university service. The first two cohorts of this program had a predicted graduation rate of 18%
  below peers but they ended up graduating at about the same rate as their peers (Brint 2018)
- Supplement instruction has also been a success. It relies on extra education by peers in class
  who are trained in presenting material learning in the class. Low-income students require extra
  effort not normally provided by the universities.
- There are a number of teaching methods that have been more successful than traditional
  lectures with low income and other students. These include high quality blended or hybrid
  courses which have greater student involvement and adoptive learning technology which
  modifies course content according to students level of knowledge (Fishman, Ludgate and Tutak
  2017).

a. **Worked-based Career and Technical Education (CTE).**

Post-secondary education and training is not limited to academic two year and four year
degrees. Many countries of the world, especially Germany, place considerable emphasis on career and
technical training, and apprenticeships. There are many success stories in this category of education.

**Linked learning and "learning communities" in high school.** Linked Learning, a multi-million
dollar training program, is work-based learning, high quality Technical education and tight collaboration
with industry. The James Irvine Foundation has $100 million invested in this program (Lanford, Maruco
and Tierney 2015). Learning Communities and Linked learning students have higher rates of
engagement and higher graduation rates than their peers in traditional high schools. These learning
community students have 8.9 more credits over four years of high school. They are more likely to have
"soft skills" valued by industry. This program is very similar to the Pathways in Technology program
started by the New York City College of Technology and IBM. This is a six year program, wherein
students earn a high school diploma and attend cost-free a community college in the STEM field. It
involves 110 schools and 500 industry partners in neighbor states (Ellen 2018).

**Work-based learning and technical education.** An important conference at Brookings in
Washington in October, 2018, focused on work-based learning opportunities with close relationship
with a skilled adult. Participating in such a work-based cooperative education, internship,
apprenticeship, or mentorships program in high schools related to high subsequent job quality and
employment. In general, having a job as a teenager (ages 16 to 18) or at age 23 predicts a higher quality job in adulthood. By contrast, being unemployed in their 20s is associated with lower job quality later on. Evidence is growing that programs with integrated student support, which includes both technical and academic education, are more successful than those that focus solely on academic studies (Ross, others 2018). The federal government spends $100 million for American Apprenticeship Grants program to fund 25 public/private partnerships.

**Bridges to work.** A successful Bridges to Work program shows positive effects on college graduation. The Marriott Corporation has a bridge program for persons with disabilities. Ninety percent of nearly 3000 trainees from 232 high schools were placed in employment in 554 businesses (Marriott Foundation for People with Disabilities).

**Impact of career and technical education.** Daniel Kreisman and Kevin Strange found that CTE training is associated with higher wages. The most critical component in the program is upper level four year work in more technical fields. In 2015 alone, 39 states instituted 125 new laws, policies or regulations related to CTE. Many of these laws increased state funding for these programs (Jacob 2017).

One study found that the Massachusetts regional vocational and technical high schools increase the likelihood of high school graduation. Poor children were 32% more likely to graduate if they attended a regional vocational and technical high school (Jacob 2017), than the base-line graduation rate for poor children in the area at 50% graduation rate (Jacob 2017).

Another study found that male students in high school "Career Academies" enjoyed a 17% earnings boost when graduating and getting a job. But there was no significant earnings increase for women in the same program. Overall, the study found that Career Academies had no impact on high school graduation or post-secondary enrollment (Jacob 2017).

A Thomas Fordham Institute study found that Arkansas students with greater exposure to CTE were more likely to graduate from high school, enroll in a two year college, be employed, and have higher wages. Those who had concentrated CTE study were 21% more likely to graduate from high school. The results of the study were that CTE provided the greatest boost to students who need the most help—males and students from low-income families (Petrilli and Shaw 2016).

Often CTE training does not result in either an AA or a BA, but in a certificate. Petrilli estimates that by year ten of employment, a technical certification should result in an employee earning $47,000. By comparison, those earning an Associate's Degree would earn $56,000 in the same time period and a Bachelor's degree, $89,000 (Petrilli 2016). CTE here is presented not as a better than receiving an academic two year or four year degree, but one that may be more attainable for low-income students.

Evidence suggests that apprenticeships are a promising way to help workers build earning capacity (Council of Economic Advisers 2016).

There are 347 California Partnership Academies that have been established within large high schools. They offer students courses in core academic subjects and career oriented technical skills related to the academy career theme. A study found that participants are more likely than non-participants to graduate and to have completed the full set of courses required for admission to public universities in California.
b. **Labor Market Policies and Programs.**  
- Harry Holzer writes that education and training programs that are clearly targeted toward firms and sectors providing good paying jobs tend to be successful in raising participant earnings. Randomized control trials have highlighted the importance of linking training programs with employer and labor market needs (Holzer 2011).
- Empirical work on effectiveness of job search and training programs is generally positive. On average, the short-run efforts of labor market programs are relatively small, but long-run effects are substantial: participant employment is five to 12% higher after more than two years. (Nunn, O’Donnell and Shambaugh 2018).
- Training is often more effective for women than men and during slack times when the economy is at less than full employment (Council of Economic Advisers 2016).
- Training programs may be more effective when the young people are in school (Council of Economic Advisers 2016). It is often not successful for out-of-school youth.
- Studies have shown that trade adjustment assistance programs to train workers displaced by international trade and globalization had limited effectiveness (Opportunity America 2018).

IV. **Recommendation for Action by Experts.**

In developing sound public policy to address a complex long-term problem, it is helpful to show a wide range of recommendations by experts in the field. Congress does this all of the time with congressional hearings. Below are listed some recommendations by experts for improving graduation rates of low-income students and others from post-secondary education. The recommendations can be clustered into four of the five categories listed in the previous sections: (1) expand outreach programs to improve college readiness for high school students, (2) increase spending in high school and college, (3) improve post-secondary graduation by policies and programs in colleges, and (4) expand and improve programs directed at work experience and/or Career and Technical Education.

1. **Expand Outreach in Secondary School.**

One author argued that high schools need to acknowledge which students are ready for college and give others a certificate of completion, not a high school diploma, to those who are not ready. This would be like the regents' exam in New York that acknowledges different levels of achievement in high school. Elizabeth Barnett points out that research suggests that pre-college interventions can reduce students' need for remediation by addressing both academic and skills deficits (Barnett, others 2012). Isabel Sawhill believes that, in the long run, the way to improve college graduation rates is to improve the K-12 system (Sawhill 2013).

2. **Increase Spending and reform of funding strategies.**

A key problem with success in high school and college is that many minorities and low-income students go to segregated high schools which are poorly funded by the State and local governments. Many experts have advocated expanded efforts to reduce school segregation by race and by class and to ensure that schools serving low-income students get extra funding needed to serve children that are
not up to standards in terms of college readiness. Robert Schwartz recommended that we create a special College and Career Readiness Act. It would begin with the premise that a core mission of high schools in the 21st century must be to prepare all students for both college and careers and acknowledge that all young people do not need to go to college to have a successful career (Schwartz 2016).

Theda Skocpol, a leading authority on education at Harvard, has recommended that we increase the dollar amount of the Pell grants to low-income students, since the size of these grants have not kept up with increasing college costs. (Skocpol and Mettle 2009). Mark Schneider and Kim Clark advocate the use of "completion grants" for students who are doing well in college, but are faced with the prospect of dropping out due to short-fall in funds (Schneider and Clark 2018). Templin argues that financial barriers represent the single greatest obstacle to low-income college students (Templin 2011). Michael Mitchell and his colleagues at Brookings support the idea of states targeting more resources to public colleges that serve a large number of low-income students (Mitchel, others 2018).

The Institute for College Access and Success makes some recommendations for sweeping changes in the way public high education is funded to address the staggering problem of student debt and the high default rate. It recommends, among other things: (a) creating a new federal-state partnership that includes a strong effort to maintain or lower the net price of public college for low-and moderate-income students, (b) making a significant new federal investment in public higher education, contingent on the states maintaining or increasing their own investment, (c) increasing Pell grants because they are at the lowest point in history based on percent of college costs paid, (d) advocating state grants based on need, not merit (Institute for College Access and Success 2018).

Jennifer Mishory also proposes a new federal–state partnership that invests new federal dollars as a match to state spending. The match would account for wealth and income inequities across the states. The problem is that states vary greatly in their ability and willingness to support public higher education (Mishory 2018).

A form of increased funding is through federal "tax expenditures". Isabel Sawhill recommends using tax reform to reduce corporate taxes on businesses that invest in worker training (Sawhill 2018).

3. **Policies and Programs in College**

A number of recommendations by experts seek to improve counseling and support to low-income students within college. Banzal recommends expanding mentorship and customized support services, starting with pre-freshman year summer transition programs that can help students academically as well as kick start social networks before they arrive on college campus (Banzal 2013).

Favero believes that if low income students are given more financial aid to get through community college, it would be helpful to have a case manager to help students get an associate's degree (Favero 2018). Mary Fulton and her team recommend that we start earlier with students. We should do a better job of assessment and placement of students. This effort should identify students who are likely to face problems in college and identify proper support for them as well as the best sequence of courses related to their educational goals (Fulton, others 2014).
Mark Schneider and Kim Clark (2018) recommended that colleges use evidence-based experience to improve instruction. They also advocate the identification of high-performing low income high school students in order to steer them toward better colleges with good track records in graduation.

Engle and O'Brien at the Pell Institute argue that what is needed is a personalized education experience by making early contact with students, monitoring progress, commitment to undergraduate education and teaching, and an institutional culture that promotes success. Fishman, Ludgate, and Tutak (2017) believe that incentives should be given to teachers and colleges that improve graduation rates for low-income students. Strong leadership in colleges and universities must champion change.

4. **Expand and improve Career and Technical Training and Job-based Training.**

Many writers support expansion of skill-based education that may or may not end up with a college degree, but instills students with needed skills and good work habits. Career and Technical Education is found in high schools, community colleges, and in non-degree awarding training programs.

The former Chairman of the Council of Economic Advisors, Gregory Mankiw, argues that we must expand manpower training and skill development (Mankiw 2018). This means expanding federal funding for Career and Technical Education, now very modest compared to other aids to higher education. Robert Schwartz believes that we need a stronger push to align our educational system better, especially our high schools and community colleges, with the needs of our economy. This improved alignment is needed to equip more young people with the skills they need to take advantage of the career opportunities in high-demand growth fields. He believes that it is essential to involve employers in this training process (Schwartz 2016).

Steven Malanga is another advocate of expanded career and technical education. He goes so far as to say that many students would have been better off by enrolling in some kind of vocational education rather than four year colleges (Malanga 2017).

Martha Ross and her colleagues believe that we should move more toward career and technical education and that a critical part of that should be work-based training and education. The success of this approach it summarized in Part IV (Ross, others 2018).

5. **Labor Market Policies and Life-Long Learning.**

Alastair Firtzpayne and Ethan Pollack propose the creation of worker-controlled life-long training accounts (LLTAs) which would be funded by workers, employers and the government. Workers must count on life-long learning to keep up with the changing demands of industry (Fizpayne and Pollack 2018). Tax write-offs would be given to contributions up to $2,000 a year. Earnings from the account would be tax deferred until they reach a level of $20,000. Employer contributions would be excluded from taxable income of workers. Accounts would be used to pay for the tuition and expenses of most two year community colleges or training programs which included industry recognized certifications.
The study group on Work, Communities and Skills recommended that: (a) we create a federal tax credit to reimburse companies for 20% of new training offered to employees earning less than $60,000. (b) we reform federal education spending to fund programs that teach students, college age and older, the skills they need for the jobs of the future, and (c) provide federal financial aid for all career education that meets quality control standards (Opportunity America 2018).

VI Conclusions and Recommendations.

In spite of the great achievements of American higher education that have made us a great nation, there are many problems we face: low college graduation rates of under-represented minorities and low-income students, college debt up to $1.5 billion dollars, many Americans with no marketable skills and no higher education in spite of record enrollment in higher education, and decline of funding for manpower training and vocational education. We can and must do a better job.

a. Conclusions.

Summary observations or conclusions of this paper include:

1. In spite of the achievements of American higher education, it is not succeeding in educating children from low-income families so that they can compete in the workforce.

2. Many students are applying for college who are not prepared for higher education and end up with no degree and a large college loan debt. Neither do they have marketable skills and end up with low-wage jobs or drop out of the workforce.

3. There is too great a discrepancy in government support between (a) academic education through two- and four-year colleges and (b) career and technical education. The largest amount of assistance is through student loans which are not related to needs, and they offer no incentive for good high school and college performance.

4. Community colleges, for-profit schools, and the least competitive schools have unconscionably low graduation rates. Elite expensive colleges and universities are doing a good job in educating their students, but most of them come from higher income families and few from lower-income families. The states spend billions on higher education, but there are no additional funds given to institutions which have high enrollment and graduation rates for low- and moderate-income students. Higher education aid by states benefits mostly higher-income students.

5. The US spends much less on active labor market policies than it used to and much less than other advanced nations.

6. Lags in upgrading worker skills and education in a constantly changing economy have left many adults without a college education or special skills. The employment-to-population ratio for the working class declined from 82.3% to 73.8% from 1980 to 2016, while it declined only modestly for those with a college education (Opportunity America 2018). The real incomes of the working class and bottom 20% of adults have stagnated since 2000. Those with higher levels of education and skill have had substantial growth of incomes during this period. These trends have contributed to growing inequality in America—not healthy for American society and a drag on national growth.
7. There are a number of factors in colleges and universities which contribute to low graduation rates among low-income students. Among the more important are high student-to-counselor ratio, the large number of part-time teachers, and constant increases in costs.

b. Recommendations.

What is needed is (a) to improve the prospects of getting either a degree or learning a skill for low-income and minority students who are graduating from high school, and (b) upgrade the skills of a portion of the existing workforce whose skills have fallen behind what industry needs in the age of high technology. They include the 22 million adults over 25 who have no high school education, the 62 million with high school but no college and skills not matching the needs of industry, and the 35 million who went to college but ended up with no degree.

**Improve low-income education in primary and secondary schools.** The foundation for improving the graduation of low-income students from post-secondary education (either obtaining college degrees or achieving skills certification without degree) is improving their performance and skills in primary and secondary education. Currently, there is a large and growing gap between school performance of low-income and higher-income students. (See section 1b above). In previous papers on improving low-income education (Underhill 2011) and reducing poverty and unemployment (Underhill 2016), I recommend a whole series of experience-based measures to improve primary and secondary education for all students, but particularly for low-income students. Among these measures recommended are (1) provide more time-on-task for low-income and struggling students through longer school days and school years, (2) offer a freer choice of schools throughout the jurisdiction (with transportation) to reduce school segregation by race and class, (3) provide more state or federal funding for schools which serve more low-income students which need more help than high-income students, (4) examine how effectively funds are spent to ensure maximum school output, (4) provide better teacher evaluation accompanied by higher rewards for excellent in teaching and remove or retrain incompetent teachers, (5) expand wrap-around services to include parents of low-income students (such as done in Tangelo Park, Florida), (6) use housing vouchers to help low-income students and families to move from high poverty areas, (7) continue to attack exclusionary zoning to reduce residential segregation by income, which leads to pernicious school segregation by race and social class, (8) practice better management by empowering teachers in a good working environment, and (9) reduce high school size, as small schools have been very successful in places like New York City, and (10) ensure that high school curricula either prepare students adequately for college or teach a marketable skill (Underhill 2016).

**Directly Improve post-secondary graduation rates for low-income students.**

Many ideas for improving graduation rates of low-income students from college are contained in the previous sections about what has been successful (Part IV) and recommendations by experts (Part V). I endorse some recommendations and add some of my own.
1. Improve counseling and support for low-income and struggling students. This is particularly true in community and non-competitive colleges with a high percent of low-income students. This increased support has financial implications since offering additional counseling costs money.

2. Do a better job in monitoring student progress so that students facing problems can be identified earlier and given extra help.

3. We need to expand the percent of a full-time faculty. More universities are cutting corners with lower paid part-time faculty who have less success with difficult students.

4. My own suggestion based on attending four highly ranked universities (Berkley, Columbia, Harvard, and George Mason) is that more rewards should be given to excellent teaching, on a par with research. Typically, research university professors offer only two courses because they devote so much time to getting published. Some of the classes at Berkeley had 300 students and papers were graded by graduate students.

5. Colleges and universities should periodically reexamine course-work to ensure that it reaches slower- to- learn students and has the most advanced teaching methods.

6. Federal loans and grants are made now irrespective of student ability to master college work or their level of effort in high school. The result is that half of Pell Grant students fail to graduate and end up with large debt and no degree. They would have been better off if they pursued some good career or technical training. We should experiment with making low-income grants based on the grades of eligible students as an incentive for students to work harder to earn this assistance. This would help screen out students who are not prepared for college.

7. We need a new federal -state contract where we offer more federal aid for higher education in return for states giving more funding to colleges which serve a large number of low-income students. Currently, these colleges get no more than colleges with a less difficult student body. This would help fund increased counseling and more full-time professors. Also there is a huge variation in state funding for higher education. Some states have low wealth and some have low level of effort. Others have both low tax base and low effort. The result is a huge variation in graduation rates by state.

8. Consider more outreach by colleges to identify promising low-income and minority students in high school to ensure that they take proper college preparatory classes, as has been done in California after the demise of affirmative action.

9. Get tougher on for-profit colleges which have very poor graduation rates. Legislation is on the books to close federal grants to those which have the worst graduation rates.

10. Restore state aid to higher education to pre-2008 levels.

11. Consider "last resort" funding increases to low-income students who are performing well but running out of money and are unable to complete college. The problem is that Pell grants have been reduced as a percent of growing tuition costs over the years.

12. Rebalance the amount spent on administrative staff and instructional staff. If more money were available for instruction, more full-time instructors could be hired, replacing less-effective part time instructors.
Restore an expanded role for Career and Technical Education. Suggestions for improving Career and Technical Education include:

1. Offer more aid to career and technical education at the federal and state level and conduct a national campaign to publicize benefits of this education, particularly for students who are not ready for college. The problem is that parents and students have placed “skills training” down on the list of a desirable education and prefer to enroll in academic studies in college (typically community college) for which they are not qualified and fail to obtain a college degree.
2. Expand work-based programs as early as high school so that students are getting work experience, technical and academic education.
3. Take measures to ensure the high school students have either a marketable skill or are prepared to do college work. Currently, many high school graduates are neither college ready nor have a skill needed by industry.
4. Experiment with life-long learning accounts, with federal, employer and employee contributions to encourage life-long learning by workers to keep up with changing demands of industry.
5. Make federal tax incentives contingent upon employers increasing employee training and apprenticeships.
6. Expand in-prison and post-prison technical training so that released prisoners will have a marketable skill when they are released. The lack of marketable skills often results in prisoners returning to what they know best: involvement in illegal activities. This is one of the reasons why recidivism is so high and former prisoners have high unemployment rates. For a fuller discussion of the problems of prisoner education see my paper on reforming the criminal justice system (Underhill 2013).
7. The States should examine hours required for certification of various occupations. Many states require more than the necessary number of hours of training for such fields as being a beautician. This enables for-profit training organizations to charge $20,000 for a two-year program which beauticians with modest wages have difficulty paying pack (Kolodner and Butrymowicz 2018).
8. The states should monitor the trustworthiness and quality of for-profit training organizations. Many are fly-by-night and have low-graduation rates and poor quality.

Improve and expand national labor policies. We should not limit improving worker employability to those currently in college or universities, but include adult workers with educations that do not fit today’s economy. National labor policies include manpower training, job search, and employment services. "Manpower training" is a more familiar term. These policies and programs are aimed at upgrading the skills of workers. Often the completion of these programs does not involve a degree, but a certificate or license. Many such programs work in cooperation with vocational training in community colleges for older workers. The problem, as pointed out in Part II, is that these programs are funded at very low levels by both US historic and international standards. Given the low work-force participation by those men who do not have a college degree and high percent of the poor, who are not working at all because of obsolete skills, it is critical that we expand national labor policies to the levels of other nations. It is also critical that this training be closely aligned with the needs of industry.
Help restore worker mobility. Even if post-secondary graduation rates and skills are improved for low-income students, there remains a problem of getting good jobs. Many workers are in rural counties and parts of the country where there are few new well-paying jobs. In the first four years of recovery after the recession of 2008, counties of fewer than 100,000 people lost 17,500 businesses and counties with more than a million gained 99,000 firms (Porter 2018a). In 2017, 75% of venture capital went to just three states. Yet worker mobility over the years has declined and workers often move to other counties with few new jobs. Only seven states accounted for 50% of startups (Shaumbaugh and Nunn 2018). The labor force participation in the worst performing quintile of counties is only 66.7% compared to 82.6% in best performing areas. One major problem is that housing is so expensive in high job-growth areas that ordinary workers cannot afford to live there (Thrush 2018).

Improving mobility nationally is a desired goal, as is increasing mobility from low-income areas in cities. For 2012 to 2016, 13% of nation's 46 million poor were in the 4,000 extremely poor tracts. The prime age unemployment in these tracts is 37% (Shambourg and Nunn 2018). These areas often have poor access to jobs and adults have few contacts with other adults who have jobs. Most jobs are obtained through personal networks. One of the solutions offered above was to reduce restrictions to building affordable housing in high-cost areas. Another is to increase assistance providing for affordable housing. We should expand our housing voucher programs and ensure they encourage mobility to move to higher cost areas closer to jobs and improved public transit to ensure that low-income workers can gain access to jobs without excessive transportation costs. Currently, affluent homeowners receive through tax credits for borrowing for homes more than all funds available for low-income housing. Only 25% of eligible low-income persons receive housing assistance.

Encouraging worker mobility does not mean that we should give up on the idea of attracting more jobs into the vast parts of the country which have low job growth. It is not healthy for America for when job growth is concentrated in a few prosperous areas. We can't "write off" the rest of the country. One strategy that, in the long-run, may be more effective is to improve educational outcomes in low-growth areas. Industry is attracted to an educated workforce. State tax incentives have had marginal impact.

Finding more government revenue. Many of the recommendations made above involve investing more federal and state money to improve graduation rates of low-income students, expanding career and technical education, and expanding national labor market policies and programs. Yet the Trump tax cut reduced corporate taxes from 35% to 21% and reduced the marginal tax rate for higher income families. Although cuts may have resulted in some stimulus to the economy, many billions of dollars the windfalls through reduced taxes have gone into non-productive stock buybacks. Further, because of the huge tax cut, federal revenues are less than expected, showed an estimated $100 million additional loss to the estimated one trillion dollar revenue loss over a decade. Corporate tax revenues are down from 8% of the economy in 1950s to 1.3% in 2018 (Tankersly 2018). Increased deficits over time should increase interest rates and restrain national growth. US taxes are among the lowest of OECD countries. Most of them have a more generous safety net. The tax cut benefited primarily higher-income persons and should contribute to the growing inequality.
It is too early to predict the long-term impact of the tax cut on the growth of the American economy. But most economists cited in materials reviewed for this study put the huge tax stimulus as very modest in its impact on growth. The Congressional Budget Office predicted an increased 0.2 percentage points annually as a result of the tax cut. Gregory Mankiw, former Chairman of the Council of Economic Advisers writes that the advocates of the tax cut "offer no credible evidence that the tax changes passed will lead to such high growth [as the advocates prediction of a 3 to 5% annual national growth rate]" (Mankiw 2018 p 178). At some point, when it is politically feasible, we must revisit the huge tax cuts to tame the national deficit and ensure that the government has enough revenues to maintain a just society and reduce the excessive inequality of income and wealth which is a drag on economic growth.

The task of overcoming barriers to higher education by low-income families seems formidable in the US, considering the persistence of poverty and inequality. But I would like to end of on optimistic note. In Korea only about 12% of 55 to 64 years olds had a "tertiary" education in 2010; amazingly it was about 65% for 25 to 34 year olds in 2010. In Japan, the comparison was less than 30% for 55 to 64 year olds and nearly 60% for 25 to 34 year olds. Nearby Canada had over 50% of 25 to 34 year olds with a tertiary degree (OECD education at a glance 2012). Is there any intrinsic reason why the US could not do the same?

In sum, an integrated approach to improve acquisition of skills and college graduation rates from secondary education would include (a) improving the education of low-income and minority students in primary and secondary education so that they are more "college ready" or have a marketable skill, (b) improving counseling and other measures in college to improve the graduation rates of low-income and minority students, (c) expand and improve career and technical education for those who are not prepared for academic college education or who have chosen to develop a specific skill, (d) improve national labor programs, such as manpower training, to include adults who have been left behind because of changing technology, (e) help restore worker mobility for those who have the proper training or education so that they can move to areas which expanded unemployment, and (f) find more revenues to fund these activities.
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