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STATE UNIVERSITY COLLEGE AT BUFFALO
CAREER AND TECHNICAL EDUCATION PROGRAM
EDUCATION POLICIES AND THE EFFECT ON THE SKILLED TRADES WORK FORCE

A MASTERS THESIS IN
CAREER AND TECHNICAL EDUCATION

BY

AARON K. NADROWSKI

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTERS OF SCIENCE IN EDUCATION IN
CAREER AND TECHNICAL EDUCATION

November 2019

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Abstract

The United States of America has pushed for all to gain a higher level of education. For many years schools steered underperforming students into vocational studies. This placed a stigma on those who learn or perform vocational careers to be less than those whom have completed a college degree. Now (2019) America is facing a shortage of skilled trades persons. Those who entered a vocation soon learn that many of the skilled trades are demanding positions which require not only skill, but knowledge and dedication to learn. With the growth of technology, many of the trades require higher levels of math and science skills.

Less people are learning what is needed to build, repair, or maintain that which is used daily or that will last a life time. Has education policy and reform affected the skill trades labor force? The perception of young people needing furtherance of education through means of college to become successful in life may have driven people away from working with their hands. A series of quantitative research was used to determine if education policy and reform has affected the skilled trades industry in a negative way.

There is an increasing shortage of those who are entering the field on a yearly basis coupled with those who are leaving the many trades, has started a bidding war for talent. Most students find they are receiving job offers before they finish school. With the rising cost of college tuition compared to the lower cost of vocational trade school and the un-known

employment market for certain degrees versus the almost guarantee of employment, one would think a shortage would not be upon us.

The research shows a correlation of those who have sought higher education and the shrinkage that occurred in the skilled trades.

Acknowledgements

I would like to extend a thank you to family and friends for being so supportive of me during this process. This especially extends to my wife Toni and to our children, who has been incredibly supportive of me during this time and understanding when I could not be there. I would also like to thank my thesis committee, and especially Dr. Steve Macho, for being incredibly helpful and encouraging during and before the writing of this thesis.

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Chapter I: Introduction

Introduction

Over the last century the number of workers who can build, fix, make, or create has shrunk by drastic percentages. Many of these skilled workers were aging or retiring, “a third of electrical and electronics repairers are at least 55, while 72 percent are 45 years or older” (Wright, 2013, para 10). The need for these workers had not diminished and in many instances had become more of a necessity.

“Over the next decade nearly 3.5 million manufacturing jobs likely need to be filled. The skills gap is expected to result in 2 million of those jobs going unfilled” (Giffi et al., 2015, para 7). Many of those positions stem from a skill set centuries old such as carpenters; while some positions are relatively new, such as fiber optic technicians. The percentage of young people who sought furtherance of education through means of college to become successful in life, may have displaced people from working with their hands.

Problem Statement

How have national education policy and reform affected the skill trades work force in Erie County, New York?

Method

The purpose of this thesis was to research and determine if there was an association among education reform policy. And enrollment into Career and Technical Education that persuaded generations to stop seeking career and technical education.

This research used quantitative methods of gathering census statistics starting after the time period of War World II up to the turn of the century. The time constraint used from 1950 - 2000. The data collected compared education policies enacted at the national level and the effect on Erie County in the State of New York. There was an exploration of educational reform per presidential administration and a comparison in education level and specific careers as outlined by the United States Census for that turn of the decade. The method used Quasi-experimental design of research to establish a cause and effect ratio exploring the happenings over the last several generations.

Assumption

It was assumed all collected data is 100% factual and unbiased.

- Census data obtained from the United States Census Bureau is accurate and historically factual.
- Educational Policies outlined by presidential administration is factual.
- Presentation of all data and policies is provided without biases.

Limitations

The limitations imposed on this paper were established through data that was collected through internet researches and material found within the SUNY at Buffalo State E. H. Butler Library. A limitation of census data has been enacted due to labor and educational statistics not being assessable on a year by year basis prior to 1997 in Erie County, New York.

The education policies listed in chapter 2, are those of significance to this paper and the data needed to formulate a series of findings. Other policies that may have been enacted during certain administrations may have been omitted due to lack of bearing on this paper.

Definitions

The term craftsman as used in the census data will refer to skilled trades that require either formal training or school to become deemed a master. Managerial positions and professional positions are those that require some form of higher education to obtain and hold. Sales professionals are those that make a living performing the art of selling materials, products, or skills.

Chapter II: Literature Review

Literature Review

Problem Statement and Research Question Review

During the last century in the United States there has become a deficit of skilled tradesmen. Less people are learning what is needed to build, repair, or maintain that which is used daily or that will last a life time. Has education policy and reform affected the skill trades labor force? The perception of young people needing furtherance of education through means of college to become successful in life may have driven people away from working with their hands. A series of quantitative research was used to determine if education policy and reform has affected the skilled trades industry in a negative way.

1945 - 1949

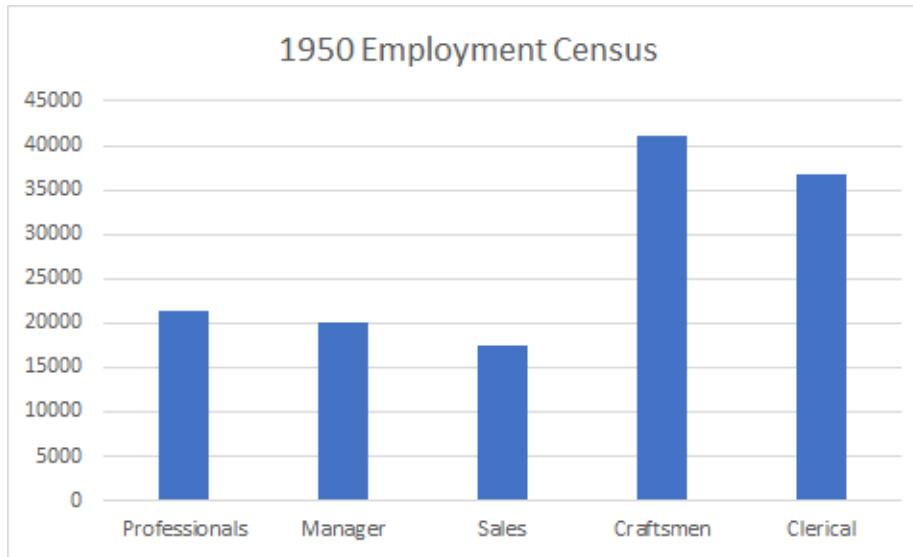
Within the given boundaries of this paper statistical data prior to 1950 will not be used from the general census nor from labor or educational statistics. References to educational policy and reform was given in a brief format to show how policy was being enacted after World War II.

One of the most influential education bills was passed and placed into action in 1944. The Servicemen's Readjustment act of 1944, or more commonly referred to as the "GI Bill" was passed. This one bill alone sparked an "explosion in higher education" ("GI Bill - Public Higher Education in America - CUNY Calendar and Curricula Websites - CUNY", 2019, para 1) Nearly half of all college students in 1947 were veterans. According to the Hypertext Hotline of American Education (page 3), more than two-million attend colleges or universities, nearly doubling the college population. About 238,000 become teachers.

The Truman Commission's proposed solution had two goals: (1) to educate college students in a broad program of general education and (2) to improve college teaching. The commission viewed these two goals as intertwined, and it identified the first two years of college as a critical period for educating citizens, hence its emphasis on community colleges (Hutcheson, 2017, para 4).

1950

In 1950 Erie County's total population was 580,132 with 366,990 of the population over the age of 25. Employment statistics listed 249,804 over the age of 14 and in the workforce. Of those listed 21,439 or 8.6% of the working population held professional positions, 20,167 or 8.1% managers, 17,465 of 7% sales positions, and 41,007, 16.4% listed as craftsmen. Of the population over the age of 25, 21.1% held high school diplomas, 4.9% had 1-3 years of college, 5.1% obtained 4+ years of college with a median grade level of 9.5 ("1950", 1953).



These statistics come several years after the introduction of the Servicemen's Readjustment Act and the Truman Commission. Without a true demographic statistic from after World War II to set a base benchmark, the research used statistics from the 1950 census as the baseline for the study.

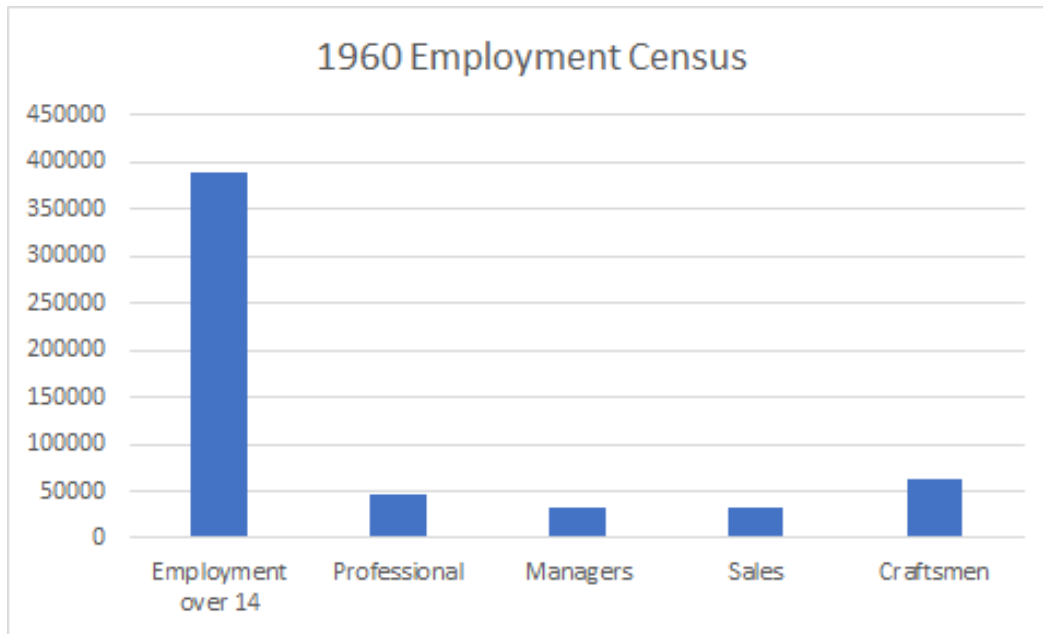
1950 started with Harry Truman as the country's president and the beginning of the Korean War. Truman had already started education reform with the Truman Commission outlying the need for more community colleges and expanded higher education with an emphasis on professional degrees and a larger look at globalization. In 1952 the Veterans Readjustment Assistance Act of 1952 was passed by congress to extend the Servicemen's Readjustment Act including Korean veterans and extend benefits. 1952 brought the election of Dwight D. Eisenhower to the office of president. Feeling that America was losing the intellectual battle with the Soviet Union he proposed the National Defense Education Act. The basis behind the act was to;

“The act provided provisions for scholarships and loans for students pursuing higher education, especially in the areas of mathematics, science, engineering and modern foreign languages. An emphasis was also placed on those students who were pursuing teaching credentials for the college levels. The act also allowed for grants to states to support programs in the areas of science, mathematics and to help graduate and doctoral students to prepare them to be professors” (Hunt, 2019 para 1).

1957 saw the Soviet Union launch the space satellite, Sputnik. This helped propel the National Defense Act into being signed as a bill in 1958. The signing of this bill spurred another growth in enrollment of higher education as seen in the 1960 census.

1960

In 1960 Erie County census listed a total population of 1,064,688. 9.9% of the population over the age of 25 had graduated high school. 4.4% had 1-3 years of college experience while 4.1% saw over 4 or more years in college with a median education level of 10.5 years completion. ("1960 Census", 2019) Erie County during the census listed 389,062 people 14 and older in the employment pool. Out of the pool, those holding professional positions grew 3.4% to a total 12% of the population pool when compared to 1950. Manager positions held steady at 8.1%, there was a small increase in sales positions up to 8.1% from 7% and the craftsmen fell slightly from 16.3% to 16.1%.



1960 brought change to the White House from being led by the republican party to that of the Democrats with the election of John F. Kennedy. According to the National Center for Educational Statistics listed high school drop outs at a rate of 27.2%. In 1962 Kennedy delivered a *Special Message to the Congress on Education*. During this message Kennedy referred to the statistics of high school drop outs and added that over 40% of those who started college did not finish (Bennet, 2019 para 4-6).

With rising unemployment and a growing labor force entering the employment field, 1962 saw President Kennedy sign into law the Manpower Development and Training Act (MDTA). According to *MDTA A Summary of the Manpower Development and Training Act of 1962* that was issued by the U.S Department of Labor in 1965:

“The MDTA provided for the first nationwide program for the training and retraining of the unemployed and the underemployed, and authorized a broad foundation program of manpower and automation research”

Title II of this act as seen on page 20 of the same publication states, “Who Pays for the Training?” and “Where does the training take place?”. The simple answer was that the Federal Government would pay 100% prior to June 30, 1966 and afterwards the States would incur 10% of the cost with the Federal Government retaining 90%. As for where the training would take place. The training was being conducted in both schools and employer facilities. The act allowed for both public and private education agencies to be used.

In 1961 the Fullbright-Hayes Act (also known as The Mutual Education and Cultural Exchange) was signed into law by President Kennedy. The preamble of the law stated,

“The purpose of this chapter is to enable the Government of the United States to increase mutual understanding between the people of the United States and the people of other countries by means of educational and cultural exchange; to strengthen the ties which unite us with other nations by demonstrating the educational and cultural interests, developments, and achievements of the people of the United States and other nations, and the contributions being made toward a peaceful and more fruitful life for people throughout the world; to promote international cooperation for educational and cultural advancement; and thus to assist in the development of friendly, sympathetic, and peaceful relations between the United States and the other countries of the world.” (TITLE 22: Chapter 33 Mutual Educational and Cultural Exchange Program. 2019 Para 1).

Part of this policy helped spur a push of students to engage in the study and research abroad with the goal of gaining better understanding of foreign countries and cultures.

The Health Professions Educational Assistance Act (1963) provided \$175 million over a three-year period for matching grants for the construction of facilities for teaching physicians, dentists, nurses, podiatrists, optometrists, pharmacists, and other health professionals. The Act also created a loan program of up to \$2000 per annum for students of optometry, dentistry, and medicine (MacBride, 1973 page 5).

In 1963 Kennedy signed into law The Vocational Education Act. With an understanding that there would be a lack of service tradesmen in the coming years, this act was designed to bring vocational education into the high school mainstream.

“Even the largest cities, which probably have the greatest need for vocational education, have not been able to make this kind of education available to all who need it. Of the 637,923 boys and girls who in 1961-62 were enrolled in grades 10-12 in the 14 largest cities (Baltimore, Boston, Buffalo, Chicago, Cleveland, Detroit, Houston, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, St. Louis, and Washington) only 115,575 were in federally reimbursed vocational courses. Not even 1 in 5 was being prepared to enter the labor market, despite the incontrovertible evidence that such preparation means a great deal to the high school graduate: a 1959 survey of recent high school graduates in 13 northeastern States found that unemployment among the graduates who had

been prepared for trade and industrial work was only 5 percent compared with 15 percent among other high school graduates”(Celebreeze, 1963 page 4 para 2).

Following the assassination of President Kennedy, Lyndon B. Johnson (LBJ) was sworn in as the next President of the United States. President Johnson continued the path laid by Kennedy and pushed the war on poverty with his “Great Society” slogan. A partial cornerstone in Johnson’s plan was The Elementary and Secondary Education Act (ESEA). This allowed more financing for schools that historically had a large percentage of low-income students and families. In its original conception, Title I was designed to close the skill gap in reading, writing, and mathematics between children from low-income households who attend urban or rural school systems and children from the middle-class who attend suburban school systems (Paul, 2016 para 2). ESEA has been reauthorized every five years since its initial enactment.

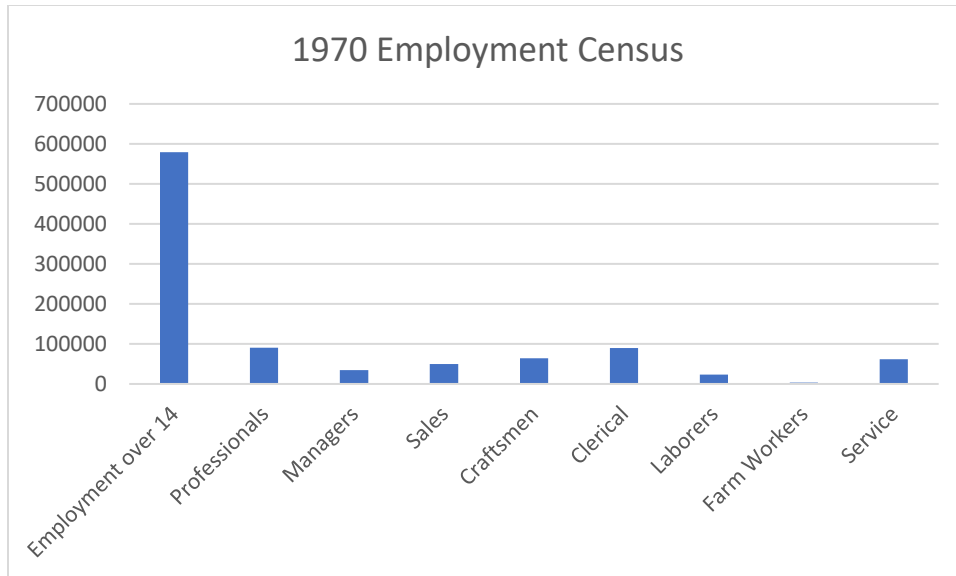
The Health and Professions Educational Assistance Act of 1963 saw major revisions in 1965, 1968, and in 1971. When the act was first brought into action provided financial assistance to schools and loans for students to enter the health field. Most of the financial assistance to the schools was for construction of larger and new facilities. The loans to students, could be up to \$2,000 per year with a 10-year repayment plan for certain schools of health (medicine, dental, and osteopathy). The repayment plan would be started three years after completion. The first amendment in 1965 allowed for more institute assistance financially in several forms and provided the students with the loan amount raised to \$2,500 with up to 50% loan reduction if the student started practice in a health professional “shortage area”. Additional areas of healthcare were added to the bill (podiatry, veterinarian, and pharmacology). Amendments in 1968 were not as great as those in 1965, however, they did see

more money in the way of grants to the institutes and more scholarships opened for the students. 1971 once again saw an increase in both available money for institutions and students. The largest change was the increase in potential scholarships to \$5,000 for those who agreed to go to "shortage areas".

1969, on April 30th, the number of U.S. military personnel in Vietnam stands at 543,482, the most at any time during the war. College enrollments swell as many young men seek student deferments from the draft; anti-war protests become commonplace on college campuses, and grade inflation begins as professors realize that low grades may change male students' draft status. ("American Educational History Timeline", 2019)

1970

The 1960s saw many education reforms and policies enacted. This led to changes within Erie County's work force as the decade ended and the 1970 census took place. The population in Erie County saw a very modest increase to 1,113,491 with 614,057 over the age of 25 and a work force population of 578,913. The median average education level completed was year 12. 30.7% of the population graduated high school, 9.7% completed 1-3 years of college and 10% completed 4 or more years of college. ("1970 Census", 2019) This helped spur a 3.7% growth in professional positions to 15.7% while 6%, sales positions increased to 8.6% and skilled craftsmen dropped by nearly 4% to 16.3% of the population.



“A traditional four-year college program is not suited to everyone. We should come to realize that a traditional diploma is not the exclusive symbol of an educated human being, and that “education” can be defined only in terms of the fulfillment, the enrichment and the wisdom that it brings to an individual. Our young people are not sheep to be regimented by the need for a certain type of status-bearing sheep skin.” (“Text of Nixon Message to Congress Proposing Higher Education Opportunity Act”, 2019 page 6, para 1)

Richard Nixon was sworn into the Presidency of the United States in 1969 following the election of 1968. During his time in office Nixon was straddled with many foreign policy issues and did not enact much domestic policy as his predecessors in the 1960s. His largest education push was seen in his message to congress with the emphasis on loans and grants for low-income students looking to enter college or other post-secondary education. In 1972 Nixon signed the Higher Education Amendments of 1972, which amended the Higher Education Act of

1965. One of the most dominant parts of these amendments come in Title IX, which prohibits discrimination based on sex in all aspects of education. This also helped to propel female participation in sports. ("Title IX, Education Amendments of 1972 - Office of the Assistant Secretary for Administration and Management (OASAM) - United States Department of Labor", 2019)

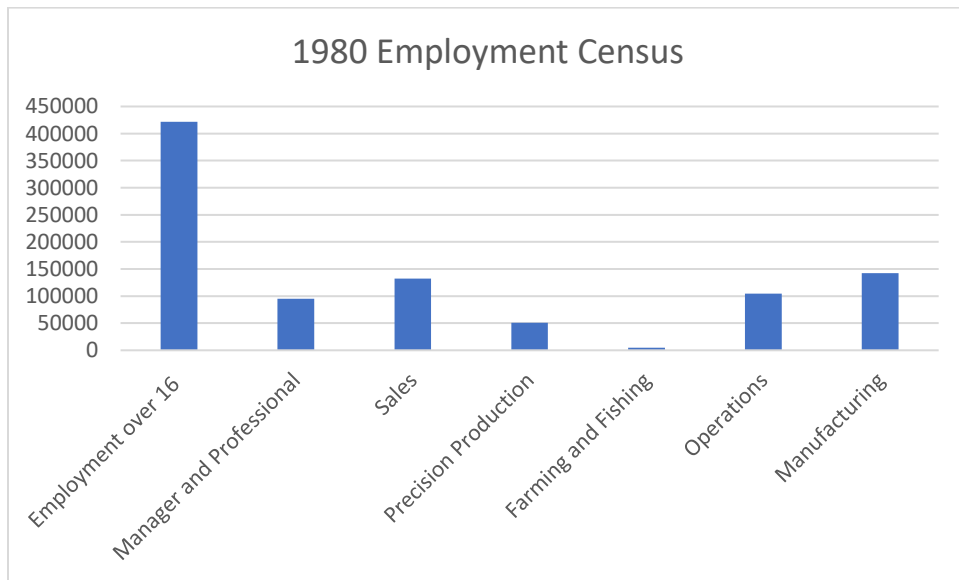
After the resignation of President Nixon in 1974 due to the Watergate Scandal, Gerald Ford was sworn in as America's 38th president. During his short time as president Ford would sign one significant education article into law, The Education of All Handicapped Children Act. This helped ensure open doors to all children with mental or physical handicaps.

Jimmy Carter won the 1976 presidential election and was sworn into office January of 1977. During his administration President Carter was faced with many economic and foreign issues of substance. While not passing any educational policies or reform of note, he was able to establish the United States Education Department and added this as a cabinet level position within his administration. ("Jimmy Carter on Education", 2019 para 3)

1980

With economic woes facing the nation and minor education reform at the national level compared to the decade of the 1960s, Erie County New York saw a population decrease as steel mills closed around the Great Lakes region of the country the era of the "Rust Belt" was in full force (Huizenga, 2019). Erie County's total population lost close to 100,000 people as the 1980 census counted 1,015,472 people down from 1,113,491 in 1960. The educated populous however only shrunk by less than 1,000 people over the age of 25, down from 614,057 to

613,302. Even with the shrinking population the attained level of education rose with 216,885 people graduated high school, 91,212 had 1-3 years of college, while 92,701 obtained 4 or more years of college. ("1980", 2019). Those employed over the age of 16 shrunk significantly as career census updated the professional categories. With a total of only 421,794 listed employed over the age of 16, managerial and professional positions were combined into one category. Those careers combined rose only 1% from 21.7% of the working populous to 22.6%. Sales professionals saw a magnificent increase from 8.6% to 31.4%. Craftsmen were re-introduced as a category that combined Precision Production, Craftsmen, and Repair Personal. This new category held 12.1% of the work force population while craftsmen held 11.2% during the 1960 census.



1980 saw a political landslide when the Great Communicator Ronald Reagan won the presidential election over incumbent Jimmy Carter. 1981 the Secretary of Education T.H. Bell created the National Commission on Excellence in Education to provide a full unbiased report on the quality of education in America ("Archived: A Nation At Risk", 2019). In 1983 the

commission released its findings in the Nation at Risk: The Imperative for Educational Reform was released. This report outlined the decline America had taken in education. Stating statistical fact from SAT scores and the amount of remedial math and science achievement scores, coupled with drastic rise in those placed into remedial math classes at the college level. Some of the findings in the report suggest that many students took classes more prepared for college than that of vocational studies as seen here; “Students have migrated from vocational and college preparatory programs to "general track" courses in large numbers. The proportion of students taking a general program of study has increased from 12 percent in 1964 to 42 percent in 1979.” (“Archived: A Nation At Risk”, 2019). While doing so many of the students failed to master classes they did take, as seen on page 16 of the report;

“This curricular smorgasbord, combined with extensive student choice, explains a great deal about where we find ourselves today. We offer intermediate algebra, but only 31 percent of our recent high school graduates complete it; we offer French I, but only 13 percent complete it; and we offer geography, but only 16 percent complete it. Calculus is available in schools enrolling about 60 percent of all students, but only 6 percent of all students complete it.”

Even with this knowledge on hand, President Reagan did little in the way of policy reform. What was seen in Federal Government educational policy was a cut of federal funding to education and reduce the growing amount of Guaranteed Student Loan amounts, while also allotting money into private schools from federal money deferred to the states. However as described by Fiske in 1982:

“The Administration had hoped not only to cap the rapid growth of the Guaranteed Student Loan program but to reduce the other programs by one-fifth. It ran up against strong bipartisan opposition in Congress, however, and total expenses have actually risen from \$5.1 billion in the 1980 budget to \$6.6 billion in 1982” (Fiske, 1983 para 19).

While Fiske wrote this in 1982 and the “Nation at Risk” report did not emerge until 1983, no major policies to offset the course that was laid by President Reagan were enacted.

1989 brought a continuation of the Republican Party controlling the White House as Vice President George H.W. Bush was sworn into the office of President in January of 1989. Wasting little time on education reform President Bush submitted to Congress the Educational Excellence Act of 1989. This act called for a larger role of the Federal Government in education. The opposite of what Bush’s predecessor President Reagan platform on education. Unfortunately for President Bush, the Act failed to be passed by congress. “Contrary to much of the President’s rhetoric, the Act did not call for national education standards or tests, although it did call for a “federal assessment of accountability” (Calzonic & Showalter, 2009 page 4 para1).

To help gain support for the Educational Excellence Act, President Bush hosted a two- day summit at the University of Virginia in Charlottesville on September 28 and 29, 1989. Invited to this summit were nearly every state chief executive. This “brought the White House together with the chief executives of nearly every state to discuss a single policy issue, for only the third time in American history.” (Klein, 2014 para 2). Unfortunately, even with the support of the

nation's Governors, the bill was still held up and not passed by congress during its resubmittal in 1990. During President Bush's State of the Union address in 1990 he outlined America 2000:

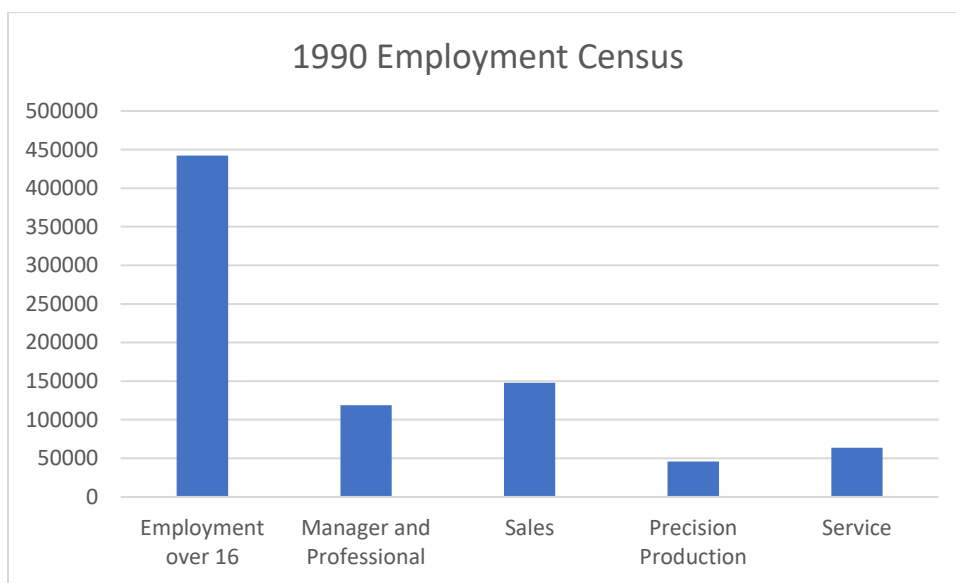
"By 2000, Mr. Bush told the country, every child in the United States would start school ready to learn, and the high school graduation rate would rise to at least 90 percent. Every American adult would be a literate and skilled worker. The nation would lead the world in math and science achievement. Schools would be safe and drug-free. And, most critically: Every student would leave grades 4, 8, and 12 having demonstrated competency in English, mathematics, science, history, and geography" (Klein, 1990 para 15).

While the Educational Excellence Act was never passed into law, the summit and ideas outlined in the act have had bearings on the next several presidential administrations as they have each tried to tackle the question of education.

1990

As the 1980's ended with no education reform to push students to further education on a secondary level the 1990 census redefined education levels and used diplomas as a base. Erie County had a populous of 640,137 over the age of 25 that reported education levels. 31.7% reported graduated from High School, 4.2% held an associate degree in some form of occupation while another 4.2% held an associate in academic discipline. 12% held bachelor's degrees, 5.5 held master's degrees, 1.8 professional degrees and .8% held doctorates. ("1980", 1983) The employment sector listed 442,126 workers over the age of 16 compared to 421,794 in 1980. Professional and managerial careers saw an increase of 4.4% of the workforce from a total of

95,281 or 22.6% up to 27% and 118,833 positions. Sales professionals also an increase of 2.1% and a total increase of positions by 15,349 raising from 31.4% and 132,637 positions to 147,986 positions and 33.5% of the workforce. Precision Production and Craftsmen saw a drastic decrease of the workforce dropping from 12.1% to 9.6%. in 1980 50,850 of these positions were held compared to 46,077 in 1990. (*1990 Census of Population Social and Economic Characteristics, New York, 1993*)



In the 1992 national elections Governor Bill Clinton from Arkansas won the presidential election. First time a Democrat held the oval office since Jimmy Carter's one term presidential regime that ended with the 1980 election of Ronald Reagan. President Bill Clinton before the election was a leader of the educational taskforce of the National Governors Association and was commended by President Bush during the 1989 summit at the University of Virginia "for his role in helping bring about consensus." (Klein, 1990 para 3). When Clinton took the presidential office, statistics showed that in 1990, 38% of high school graduates had taken a core curriculum of four of English and three years each of Math, Science and Social Studies. While fewer than 80% of

high poverty schools received Title 1 funds which had disadvantaged schools having water-down curricula and low standards. 1992 only 14 states had standards in core subjects. ("The Clinton Presidency: Expanding Education Opportunity", 2019 para 2).

On March 31, 1994 GOALS 2000: Educate America Act was passed into law. This was first conceived under the President Bush during the Educational Summit of 1989 then called America 2000 (Calzinic & Showalter, 2009). President Bush outlined this during his 1990 State of the Union address. This Act allowed President Clinton to add more education reform and policy throughout his tenure as President of the United States. In 1994 President Clinton signed into law the School-to-Work Opportunities Act of 1994.

The US Departments of Education and Labor developed the School-to-Work initiative to address a growing national concern about the gap between the skills and education required to be competitive in the global economy and the knowledge, skills and abilities of students exiting the U.S. educational system. The initiative created a framework for the development of School-to-Work systems in the states that called for the integration of school-based learning with the real-world context of work. The School-to-Work Opportunities Act of 1994 was passed by Congress in May of 1994, providing seven years of implementation grants to states through the National School-to-Work Office ("THE SCHOOL-TO-WORK OPPORTUNITIES ACT OF 1994", 1994 para 1).

This Act allowed for career exploration for students that included non-traditional opportunities for race, gender or ethnicity while also applying a curriculum integrating academic and vocational learning.

1994 Also saw the reauthorization of the Elementary and Secondary Education Act (EASA) of 1965 into the Improving America's Schools Act (IASA) of 1994. Of many revisions to the 1965 Act one that set the motion for standardized test came in Title I:

Requires any State desiring to receive a grant (under provisions for improving basic educational programs operated by LEAs) to submit State plans that are coordinated with other programs under ESEA, the Goals 2000: Educate America Act, and other Acts, as appropriate. Requires each State plan to describe challenging standards for all children that will be used by the State, its LEAs, and its schools to carry out this Act, including: (1) challenging academic content standards; and (2) challenging student performance standards. Sets forth assessment provisions and other teaching and learning support provisions. Directs the Secretary of Education to establish a process for peer review and Secretarial approval.

Requires LEAs receiving subgrants to have plans with standards and assessments provisions and other teaching and learning support provisions. Provides for State approval and shared program responsibility of schools and the LEA in deciding on schoolwide programs and targeted assistance schools

("H.R.6 - 103rd Congress (1993-1994): Improving America's Schools Act of 1994", 2019 para 5-6).

Title II of the IASA focused on the development of teachers and schools:

The new Eisenhower Professional Development program (Title II) supports sustained, intensive, high-quality professional development tied to challenging state academic standards. Most of the funds will focus on teacher improvement efforts based on professional development plans created and implemented by school districts and schools. The program ensures that teachers and principals play a crucial role in determining what kind of training they need as professional development moves from one-time workshops toward more lasting efforts that are integrated into the daily life of the school. Program funds will assist institutions of higher education and other organizations to develop the capacity to offer high- quality professional development. Funds may also be used to support the development of clearinghouses, professional development institutes, and networks of teachers and administrators. Title II funds will be tied to other professional development efforts, such as those under Title I and Title VII, to enhance the capability of school districts and schools to better meet the needs of today's diverse students (Riley, 1994 para 7).

According to the website *Clinton-Gore Administration: A Record in Progress*, at the end of their administration President Clinton and Vice President Gore set high standards for American

Education helping reading and math scores to increase and Math SAT scores to be at a 30-year high. Listed are bullet points directly from the website:

- President Clinton and Vice President Gore enacted Goals 2000 which has helped States establish standards of excellence for all children, and implement steps to meet those standards and to raise educational achievement. Under the Clinton-Gore Administration, 49 states have implemented standards in core subjects and the proportion of graduating high school seniors completing a core curriculum has risen to 55 percent.
- The President enacted legislation targeting Title I funds to high-poverty schools and requiring States and school districts to turn around low-performing schools. Today, nearly all of the nation's highest-poverty schools receive Title I funds. In 1999, the President enacted a new \$134 million Accountability Fund, which is helping school districts improve low-performing schools by investing in proven reforms. Next year's budget increases this fund to \$225 million.
- The Clinton-Gore Administration has worked to expand public school choice and to support the growth of public charter schools. In 1993, there was one charter school in the nation; today, there are more than 2,000.
- President Clinton fought for and won a new initiative to repair America's schools, providing \$1.2 billion for urgent school renovation.

2000

President Bush who self-proclaimed himself as an “education president” started the 1990s by ushering a bipartisan idea called America 2000 Strategy that was enacted by President Clinton in his Goals 2000: Educate America Act saw vast reforms in the American Education System that saw Erie Counties statistics during the 2000 census change. Erie County had 637,676 educated people over the age of 25. 190,461 held high school diplomas, 41,423 had some college, 60,320 held associate degrees, 92,112 bachelor's degrees were held, master's degrees numbered 45,138, professional degrees were counted at 13,125, while doctorate degrees numbered 6,137. The employment census showed 745,814 people over the age of 16. 149,727 held manager and professional level positions, 67,285 were listed in the service industry, 121,262 held sales careers, 29,391 were in the construction trades, and 62,793 were in the transportation industry. (DADS, 2019)

Chapter III: Methods

Problem Statement and Research Question Review

During the last century in the United States, a deficit of skilled tradesmen formed. Less people learned what was needed to build, repair, or maintain which is used daily or learned Career and Technical skills which will last a life time. Had education policy and reform affected the skill trades labor force? The perception of young people needing furtherance of education through means of college to become successful in life may have driven people away from working with their hands. A series of quantitative research was used to determine if education policy and reform has affected the skilled trades industry in a negative way.

Quantitative Method Definition

“Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques”. (“Research Guides: Organizing Your Social Sciences Research Paper: Quantitative Methods”, 2019)

For the research a Quasi-Experimental form of quantitative research was used.

“A Quasi-Experimental Design (often referred to as Causal-Comparative) seeks to establish a cause-effect relationship between two or more variables. (“Sampling Methods for Quantitative Research - Center for Innovation in Research and Teaching”, 2019)

Research Design

The research used derived itself through statistical and historic data. The design implemented was used to show a cause and effect on policy/reform compared to a narrowed demographic of labor force. Using this research, a direct comparison was established to prove the assumption that education policies had driven workers away from the skilled trades in pursuit of other established means of wage earning.

Research Collection

Research was collected over a several month period using government web sites both local and nationally. Research was performed at the Buffalo State College Library with the assistance of phone calls to the Erie County Department of Labor and the New York Department of Education. Labor statistics were used to gather information on percentage of workers compared to the labor work force for several areas of skilled trades through the early part of the 20th Century to modern times. Education policies were researched to see what impact they may have had in the ensuing years on the labor force for skilled trades.

Data Analysis

As data was collected charts and graphs were created to model the data in an easy to read and comprehend format. Using charts and graphs, a direct comparison was shown as to how the labor forces expanded and diminished over the course of the decades during which this research was based upon.

Limitations of Research

Due to the vast information and time needed to complete a thorough evaluation of the United States, limitations on the research and scope of this paper were confined to the labor statistics of Erie County in the state of New York. The research used education policy that was enforced by the United States Department of Education as well as the New York Department of Education. Time frame of this paper ranged from data starting in 1950 and transversed through 2000. Demographics used were from the census beginning with each decade. Not all professions were used for the data. A sampling of several fields were used to show comparisons from decade to decade.

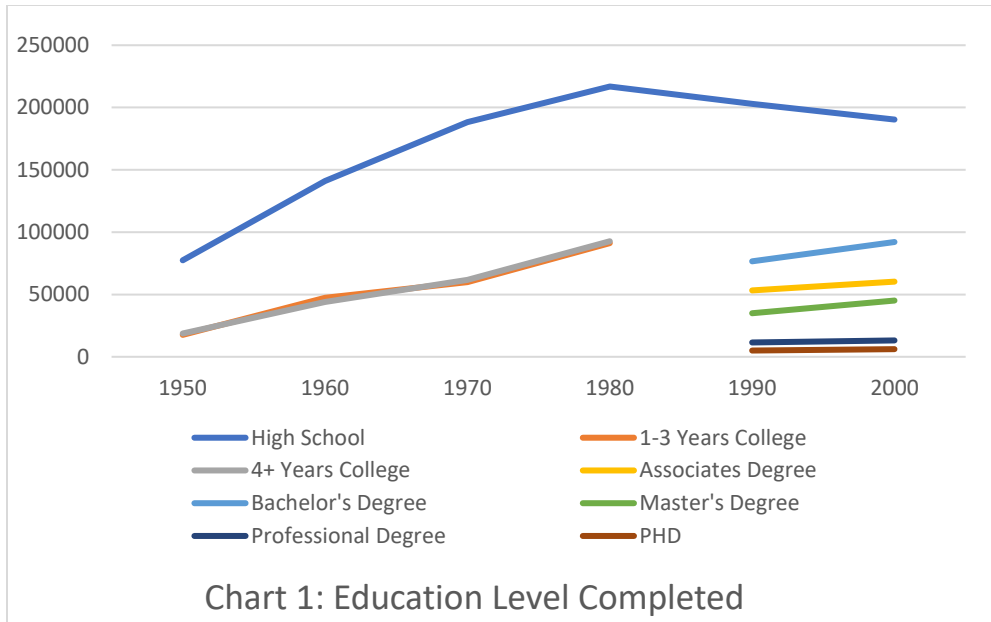
Chapter IV: Findings

Problem Statement and Research Question Review

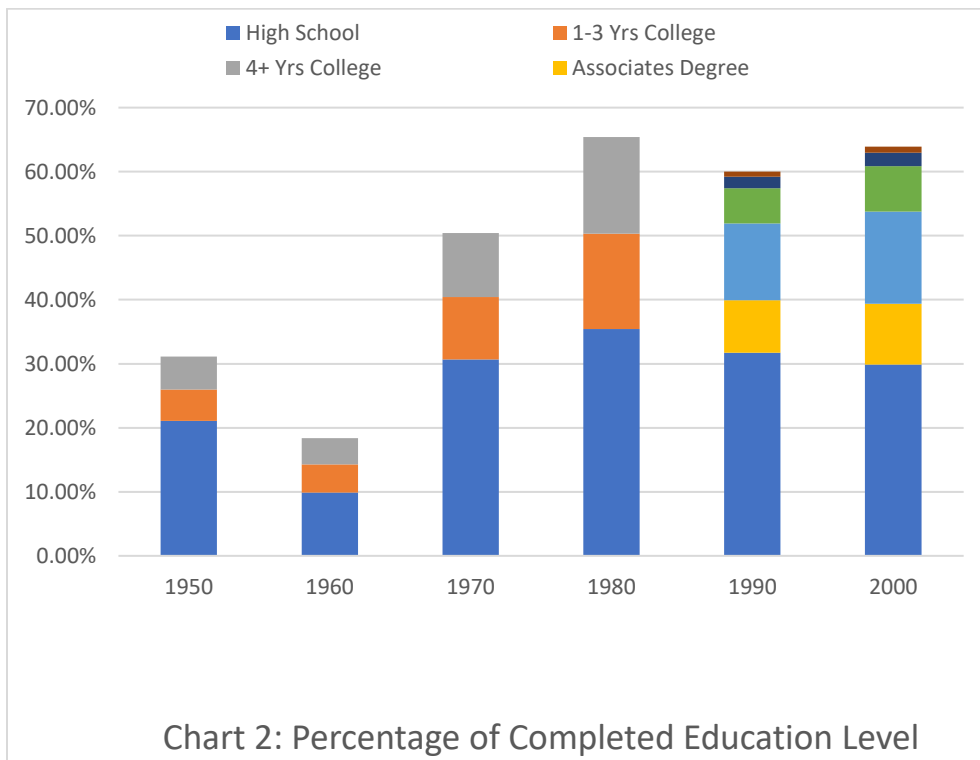
During the last century in the United States, a deficit of skilled tradesmen formed. Less people learned what was needed to build, repair, or maintain which is used daily or learned Career and Technical skills which will last a life time. Had education policy and reform affected the skill trades labor force? The perception of young people needing furtherance of education through means of college to become successful in life may have driven people away from working with their hands. A series of quantitative research was used to determine if education policy and reform has affected the skilled trades industry in a negative way.

Educational Findings

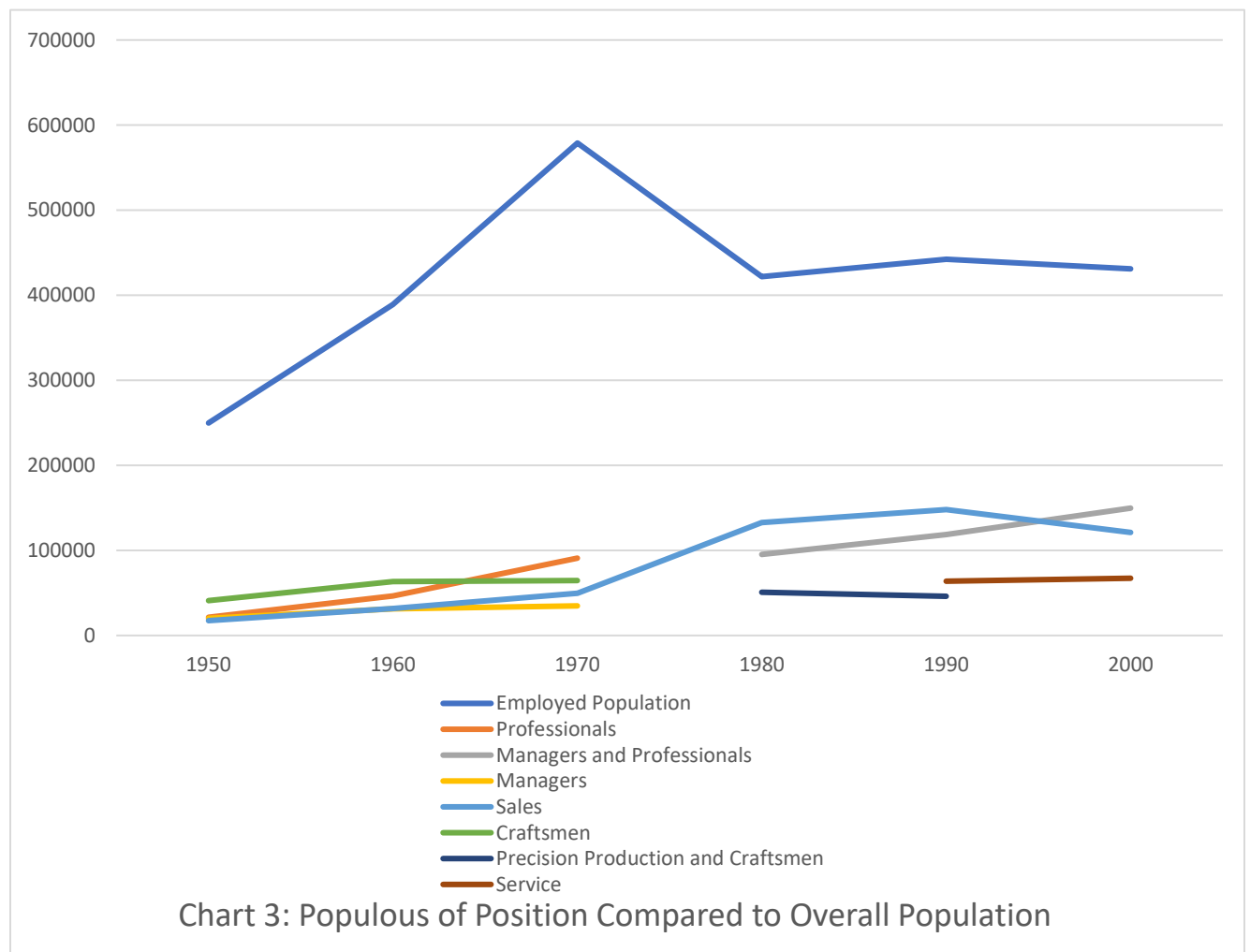
This research has shown with each passing decade the education level rose. More students graduated high school and raised the median grade level completed. During the time period of the research it had been documented that more people in Erie county had completed college level degrees and higher as indicated in the charts below. Chart 1, Education Level Completed, displays the total number of people who had attained different educational levels. The census data did not provide statistical data of degrees earned through 1980. 1990 and after statistics revealed the level of education achieved by degree level.



The following Chart 2: Percentage of Completed Education Level, revealed a break-down of the percentage of the populous over the age of 25 and the education levels that were achieved.



The titles of occupation changed with each decade and census. Chart3: Populous of Position Compared to Overall Population, revealed how the titles and groupings of occupation transformed over the years of this research. The research did suggest the skilled trades worker declined regardless of the title and grouping associated with census compared to those of managerial, sales or professional occupations.



Chapter V: Summary and Conclusion

Problem Statement and Research Question Review

During the last century in the United States, a deficit of skilled tradesmen formed. Less people learned what was needed to build, repair, or maintain which is used daily or learned Career and Technical skills which will last a life time. Had education policy and reform affected the skill trades labor force? The perception of young people needing furtherance of education through means of college to become successful in life may have driven people away from working with their hands. A series of quantitative research was used to determine if education policy and reform has affected the skilled trades industry in a negative way.

Summary

With each presidential administration new acts and laws were passed to promote higher education or to raise national test scores. From the Eisenhower administration through the Clinton administration there had been a challenge of keeping America's education level at a high standard globally. When there was a question of how America compares to the rest of the world policies, were enacted to push American students to perform better academically. In Erie County there was a continual shrinkage of the population since 1960. While the population shrunk, the number of those with a higher education had grown. Statistically it was proven that skilled trades and craftsmen had shrunk percentage wise compared to professional and sales careers during the time frame (1950-2000) of this study.

Conclusion

Due to many factors which contribute to these demographic findings this research is inconclusive. While we can compare census data for every 10 years, the work force demographics and the percentage of the populous that held different positions, with the social and economic factors of the time frame not being counted for this research is unfounded. While, it would appear, educational reform and policy point to a reduction in the skilled trades workforce, it may not be the only factor present. When the steel mills of Erie County closed, and the auto industry started to shrink many skilled tradesmen may have left the area or been forced to consider retraining for a different career. This solo example could have affected the census data more or less than educational policies over the same time.

Therefore, no solid conclusion had been established. To declare an association between education reform and declining of the skilled trades requires consideration of other factors.

Recommendations

I recommend that a longer more detailed study of this research to expand nationwide. The expansion of the study should include additional factors such as; technology advancements, economy, and culture. Only then can a true conclusion be rendered on how education reform has fully affected the skilled trades.

Discussion

The findings in this research indicate that as education policies were enacted to help foster larger enrollments in college and push for higher education. Thus, leading less people to

enter the skilled trades. Over many years it has been perceived that for a person to be successful they would have to graduate with a degree. For many Generation X and Millennials Career and Technical Education was removed from high school curriculums. With no or little introduction to the skilled trades many have no basis to judge if these fields are viable options for success.

As the United States is currently seeing deficient numbers of those entering the skilled trades while many are retiring and leaving the field, it may be time to re-introduce the next generation to more Career and Technical Education. Having classes in wood shop, metal working, electric, plumbing, and a multiple of others may be what is needed for younger Americans to gain interest and understanding that while higher education and a college career is a great achievement there are other options for success and financial stability.

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