AN ABSTRACT OF THE DISSERTATION OF

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Title: Making the Connection to K-12 Education for Noncollege-Bound Students:

The Voices of Students and Workers Address School Experiences and Workforce

Preparation.

Abstract approved:

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Chris L. Ward, PhD.

This study examined the relationships between business, education, and the

economy, and specifically addressed the significant impact that business has had

on education and educational policy.  A large amount of research exists on the

history of school reform and the development of educational policy, but none of

the research examined for this study included the voices of students and workers.

Business has had a powerful influence over the decisions that educators make

about what is taught and how schools work.  However, the focus of schools

continues to be on academics, not on workforce preparation.

        This mixed methods study combines survey and interview data to examine

the perceptions and experiences of high school students as well as workers who

have not gone to college.  Portland Public Schools in Portland, OR, provided the data from Senior Surveys for 2005, 2006, and 2007 for this analysis.  Participants were high school seniors who were about to graduate from high school.  The survey collected data on their post-high school plans and the perceptions of their school experiences.  Six adults with positive, productive workplace experiences, but who have not attended college were also interviewed.  These adults shared their experiences as students and as entry-level workers, and shared their opinions about the level of support high schools provide for students entering the workforce.

The survey data showed that high school seniors either felt prepared academically, or they felt prepared with soft skills, but not both.  The interview data, assessed using grounded theory, revealed that these noncollege-bound high school graduates have learned to access the soft skills that help them be successful at work, but those skills were unreachable in high school.  Both survey and interview findings identify the need to integrate academic skills with traits that lead to increased productivity.  The survey data support existing research that indicates the majority of high school graduates do not enter college directly after high school. The findings of this study emphasize the importance of worker and student voices in educational policy and practice, and the importance of valuing students who plan to go to work after high school.

Making the Connection to K-12 Education for Noncollege-Bound
Students: The Voices of Students and Workers Address School Experiences and
Workforce Preparation


by

Willa M. Campbell



A DISSERTATION



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APPROVED:


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Major Professor, representing Education




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Dean of the College of Education




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Dean of the Graduate School



I understand that my dissertation will become part of the permanent collection of
Oregon State University libraries. My signature below authorizes release of my
dissertation to any reader upon request.


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Willa M. Campbell, Author

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DEDICATION

This study is dedicated to my mother and my Aunt Clara

for their unwavering support and belief in me.

MAKING THE CONNECTION TO K-12 EDUCATION FOR
NONCOLLEGE-BOUND STUDENTS: THE VOICES OF STUDENTS
AND WORKERS ADDRESS SCHOOL EXPERIENCES AND
WORKFORCE PREPARATION


CHAPTER ONE


INTRODUCTION


As I move through my daily routine, I have observed changes in hiring

practices in the businesses that I frequent. The local grocery store added 12 self-

checking lanes in a recent remodel, resulting in a reduction in staff of eleven

people. The people behind the counter at the coffee shop that is on my route are

articulate and socially adept at making connections with customers. They also

appear to be well educated, giving the impression that a college degree is one of

the job requirements for selling coffee. The school district that I work for has

reduced the number of school cooks and custodians across the district, yet the

population in my school has increased by 200 students.

As a citizen, I am concerned that these subtle changes in the workplace are

creating an ever-growing group of people who will be forever unemployed or

underemployed. I am concerned that these changes are happening so quietly and

so quickly that the impact on the economy will catch us all by surprise. As an

educator, I am concerned that the primary focus of K-12 education is relentlessly

on college-bound academic preparation, when the reality of many of our families

is that most of our students will go directly to the workplace.  Most of all, I am

concerned about the students.  Can we even imagine what the workplace will look

like in 10 years?  Will our students be prepared with the technical and practical

knowledge they need to get and keep a job?  Are we doing the right things?

*Rationale for the Study*

The Information Age is reshaping our economy at a faster pace than the

Industrial Revolution.  Assembly lines that once relied on human power are

dependent on robotic technology.  The high-tech industry is changing so rapidly

that line workers can expect to change product mid-shift.  Work that was once

considered boring and repetitive now requires elaborate in-house training

mechanisms to address rapid changes.  Entry-level employees must come to work

able to multi-task, change their focus at a moment's notice, and learn new

technology quickly.  At the same time, financial and public support for K-12

public education, which is responsible for preparing students to be productive

workers in this rapidly changing environment, are nearly non-existent (Menefee-

Libey, Diehl, Lipsitz & Rahimtoola, 1997; Nelson, Polansky, & Carlson, 2000;

Smith & Scoll, 1995).

Reconnecting the public to the value of K-12 education is critical at this

economic juncture.  Increased accountability and reduced funding are clearly

incompatible. Many academics will argue that the purpose of education is to

develop the intellectual capacity of our students to the point at which higher level thinking and lifelong learning become a part of the students' makeup. Though I agree with this argument, everyone eventually goes to work. This perspective does not reassure me that students are leaving school prepared for work.

The general public attitude toward education suggests that education is viewed as separate from the economy (Kerchner, 1997; Menefee-Libey et al., 1997; Nelson et al., 2000). But should it be? Doesn't this separation reduce the value of education? If education, business, and policymakers worked together for the shared success of all students, the support for education and the confidence and attainment of our students would look very different than it does today. Can the value or the place of education in the economy be redefined to close this gap?

Technology has drastically changed the workplace. Businesses are looking for specific sets of traits in entry-level workers to meet a new set of needs. School districts are working to reform high schools to reduce the dropout rate and better prepare students. But are business leaders and educators talking? Is the K-12 education system doing its job in meeting the needs of this new economy? The focus of this investigation was to uncover existing research on the relationship of education and the economy. It was also to learn what businesses expect from entry-level workers and how those expectations relate to school.

*Background*


  A diverse and eclectic path has fueled my interests in politics, education, and the role of technology in the workplace.  My rural, working-class upbringing in Iowa was coupled with a saturation of books and long conversations about the state of the world.  My parents were Depression Democrats who did not see the economic recovery that most people experienced in the 1950s.  Dad was a high school dropout who worked the local gas station, pumping gas and changing tractor tires.  Mom started college in the 1930s, but was forced to quit when her mother died.  She was a school cook and very active in the community.

  Agricultural success in Iowa required competing in the international grain markets. It meant that people read the paper and talked about political and economic relationships that affected the market.  I stood on the fringes of those conversations when I was a little girl, intrigued by the complexity in which the world worked and by the impact that my neighbors were having on hunger in the far corners of the earth.

  When I was about 10 years old, hybrid corn changed farming forever.  We drove 30 miles one Sunday afternoon to look at a test plot.  The corn was a foot taller than anything else around and produced more ears per stalk than anything traditional farming could keep up with.  Before long, the yield from an acre of land had increased two and three times.  We expected this to be a breakthrough for the small farmer.  Instead, a huge surplus and lack of storage resulted in low prices

and gigantic piles of corn rotting in the streets as farmers waited at the co-op for a

chance to sell their corn.  In just a few years, farmers began losing the land their

families had lived on for generations.  This was my first experience with the

impact of technology on livelihoods.

Today, I see the cycle happening again.  The boom of the high-tech

industry saw the development of many computer-related jobs that brought with

them premium salaries.  Other countries saw the potential in the market and began

promoting the same work and the same quality at a much lower cost to businesses.

The result has been the outsourcing of both manufacturing and engineering jobs

and a growing population of unemployed people, many of whom are highly-

trained workers.  As with farming, no one has offered a contingency plan for U.S.

workers (Leontief & Duchin, 1986; Nelson et al., 2000; Organization for

Economic Cooperation and Development, 1994a & 1994b; Picus & Bryan, 1997).

I am most concerned with the entry-level workforce.  Those who study

economic trends say that service jobs will never go away.  I see something

different.  We have experienced a major transformation in the banking industry

with electronic tellers and online banking.  Many of us scan our own groceries and

pump our own gas.  My parents, who were hard-working and regularly employed,

would be hard-pressed to make a living if they were in the workforce today.

Economists and policymakers are not working with educators to address

the impact of changes in the workplace on entry-level workers.  Instead, they

blame educators and impose requirements to hold us accountable for "fixing"

students to meet new demands in the workplace, demands that the economy has imposed. Those of us who are familiar with the Oregon Certificate of Initial Mastery (CIM) are aware of how rapidly, and often how painfully, these requirements have become a part of public schools. As the work sample coordinator for Portland Public Schools, I was a part of the pressure placed on teachers and students to meet the demands of the State assessment program. I witnessed legislators making decisions about testing based on the experience of one senator whose third grader cried while taking a test. I was a member of the TriCounty CIM Task Force that interpreted each new legislative and Oregon Department of Education decision and their implications for school districts. I worked with schools that were struggling to develop consistent scoring plans and storage systems, and sometimes to just find ways to get their teachers to comply. I do believe that change is necessary. Traditional education clearly is not working for many of our students, as    reflected in the high rate of high school dropouts (Oregon Department of Education, 2007; United States Department of Education, 2007). My experience with the CIM has set the stage for my interest in standards and educational policy, and it has also framed my passion to find healthier ways to implement change.

I think it is crucial that educators take an active and visible role in politics and the economy. In my growing-up years in Iowa, we gathered around the old black-and-white Philco TV to watch the political conventions and discuss the issues. My parents believed that we needed to elect political decision-makers who

would watch out for the interests of all of us, specifically politicians who would promote education for everyone. I was very fortunate when I graduated from high school in 1971. Scholarships and the National Defense Student Loan program enabled me to go to college. College was not expensive then, but college would not have been a possibility for me with both parents working at hourly-wage jobs with no health care. Today, though community colleges have opened the door to higher education for more students, many young people are in college by the sheer good fortune of their parents.

Financial support for people with my background is very hard to find. Unless the government resumes this responsibility, the vast majority of the students that I work with as an assistant principal in Portland Public Schools will not be able to attend college. I also see an increase in tracking students into college- and noncollege-bound coursework that has spilled into the middle schools and is tied directly to the restrictions of the *No Child Left Behind Act* (United States Congress, 2001). I worry about the futures of my students, and I feel that it is my responsibility to do what I can to make known how    rapidly their opportunities are disappearing.

*Epistemology*

As I have examined my experiences, concerns, and philosophical points of view in preparation for this work, I have reviewed constructivism as a perspective

that addresses the learners' personal interpretations of their experiences.
According to Kristinsdottir (2001), the constructivist views learning as an active
process in which meaning is accomplished through experience.  I have also
reviewed the constructs of critical theory and its relationship to constructivism.  I
have reached the conclusion that I must take a critical approach to my research.
Critical theory can move the constructivist view that learning is inclusive of
experience to the level of challenging existing norms to make inclusive change.
As an administrator in a large urban school district, I have seen tremendous
inequities in facilities, in access to resources, and in learning opportunities that are
underserving our most needy students, inequities that I am ashamed to say I
unconsciously overlooked in my early career.  The inequities under investigation
in this paper have their basis in economics and have come about due to classist
decisions that have sidestepped critical avenues of communication between
businesses, educators, workers, and students.  Reaching such a broad audience will
require a mixed methods methodology that is inclusive of assessments that are
considered valid by each community.

*The Purpose of this Study*

My goal as a doctoral student at Oregon State University is to wrap my interests in policy, politics, and standards into a research project that will support schools in their mission to help all students be successful. Jobs are changing and many will soon disappear with the impact of technology on how tasks are performed. My concern is how noncollege-bound students will adapt to the disappearance of traditional entry-level jobs. I worry that we are producing a generation of unemployable high school graduates. I worry that the presidential contenders, the legislators, the Bureau of Labor, and even the Department of Education are not working on this issue.

The involvement of the business community in the development of the Certificate of Initial Mastery (CIM) has shown us that businesses expect quality workers to come out of the public school system, but business people are leery of committing dollars to a system that they feel has failed them in recent years. My experience with a non-profit program called *Tools for Schools* has confirmed my thinking that businesses expect accountability before they will contribute money. Businesses look for measurable evidence that their contributions make a difference. *Tools for Schools* is a business-education partnership that provides backpacks and a year's worth of school supplies to low-income students. King Elementary School, in Portland, piloted this project with Pixelworks in Fall 2002. Following the backpack distribution, we surveyed teachers and parents in an

attempt to measure the impact of eliminating the expense of school supplies on classrooms and families. The data collected provided enough documented proof of the success of the program to attract nine more companies by Fall 2003.

*Tools for Schools* is a rare example of true involvement between business and education that works. The common scenario is a one-time dollar contribution to a designated school, not a sustainable connection. In far too many communities, education has operated independently from its constituents. The result of this separation is that the public assumes that schools have not changed since their day, resulting in a power struggle that is rooted in poor communication and lack of information. Businesses blame schools for not preparing students for work, and educational policymakers scramble to meet business demands through efforts like the CIM, but real communication doesn't take place. Classrooms operate very differently than they did just a few years ago. Students actively participate in their learning, and teachers facilitate instead of lecture. Educators have a responsibility to let people know that schools are working and that children are learning. Unfortunately, we educators have become much better at protecting ourselves from the barrage of blame from the business community than we have at advocating for kids.

We have a lot of work to do to break down the barriers. My hope is that the results of this study will help generate productive dialogue that will promote collaboration between schools and businesses to support students as they move into their working lives. Two vital missing pieces in this dialogue have been the

voices of students and workers.  Collecting input from the two constituent groups

who have historically had no input on educational policies and practices could

open the door to a new and productive phase in education and workforce

preparation.

*Research Objectives*

The information gathered through the review of literature evolved into the

following research objectives:

1.  To increase my understanding of the needs of students who enter the

    workforce immediately after high school.

2.  To compare the perceptions of high school seniors about their school

    experiences with the experiences of workforce participants who did not

    attend college.

3.   To determine whether or not study participants perceive that the K-12

    education system is meeting the needs of students entering the

    workplace directly after high school.

4.  To compare the skills and traits identified by study participants with

    those identified by business groups as desirable entry-level skills and

    traits.

5.  To determine whether or not the focus of education should be redefined

    to better support the noncollege-bound student.

*Summary of Chapters*

Chapter Two sets the stage for this investigation by examining the historical relationships between education, the economy, and work. The intent of the literature review was to build a foundation for research into what entry-level workers are finding when they arrive at work, and what businesses expect them to contribute to work. The sections of the literature review address the following questions: What does history tell us about the connections between education, business leaders, and policymakers? What do businesses expect from entry-level workers and from educators? What is the role of education in preparing students for the workplace? How have economic needs and expectations affected school reform? Can a critical examination of workforce needs and educational preparation impact students' accomplishments in the workplace? Ultimately, two central research questions evolved from the examination of literature:

- Can the voices of students and workers influence the relationship between business and education, and the direction of school reform?

- Should education be taking another look at its focus on academic preparation and its preparation of students entering the workforce?

These two central questions guided this research by defining the methodology and outcomes of this work. Chapter Three outlines the methodology of the study as it relates to each question. A detailed description of the study participants and their roles are presented, and the process of analyzing the surveys and the interviews are

defined. Chapter Four discusses the findings from the study and includes summaries of the survey data and the interview data, a discussion of the relationships between the two data sets, as well as an analysis of emerging themes. In Chapter Five, I present my interpretation of the current position of education in supporting students who enter the workplace after high school, the implications for the study participants, and recommendations for further research.

CHAPTER TWO

REVIEW OF LITERATURE

Chapter Two is a review of education and business literature that looks specifically for links between education and the economy, as well as the impact of technology on the workplace. The background information collected in this investigation sets the tone for this study. The first section of this chapter deals with how changes in technology since 1900 have affected business, and the further impact on education and educational policy. The next section examines connections between education and the economy, and then explores the expectations businesses have of entry-level workers. The final section examines educational links to the economy to find out if conversations between the two factions are taking place.

*Historical Relationship of Business and Education*

A cyclical and historical phenomenon in education is the controversy over how to educate children. A damaging outcome of this controversy was the ever-widening split between high school and college education that occurred over the course of the 20th Century. This important development gave impetus to complaints from businesses that high schools were not producing quality workers. According to Kliebard (2002):

> The high school did not replace [college] as the predominant form of secondary education until the 1880s . . . . In the nineteenth century, many students simply showed up at the college of their choice, were examined in certain subjects of study . . . and then admitted on the basis of their performance. In these circumstances, high school teachers at least were partners with their counterparts in the colleges in the common enterprise of getting students into college, and their respective views of what subjects were most important were essentially congruent. (pp. 51-52)

The differences in status and educational outlook between high school teachers and college professors were much less apparent in the early 20th Century than they are today (Kliebard, 2002). Similarities and shared goals diminished over the course of three stages in the development of conflict between high schools and colleges. Kliebard identified the three stages in reference to the work of the Committee of Ten, the Eight-Year Study, and the advent of Life Adjustment Education.

In 1893, the National Education Association's Committee of Ten on Secondary School Studies (Kliebard, 2002) recommended four courses of high school study as a solution to the independent and unpredictable college admissions process described in the above Kliebard quote. As a result, between 1890 and 1910, the high school curriculum for college- and noncollege-bound students was nearly identical, featuring Latin, German, French, English literature, history, algebra, geometry, physics, and chemistry. The Committee of Ten influenced colleges to accept high school diplomas as evidence of appropriate academic preparation for

college admission, adding a level of consistency to the admissions process (Cremin, 1988; Kliebard).

Many reforms influenced education between 1893 and the development of the Progressive Education Association (PEA) in the 1930s (Kliebard, 2002). Schools were quietly adapting pieces of a number of reforms with often conflicting outcomes. The outcomes were incongruous because local school administrators "found it more important to be able to say to their constituents that things were up to date than to adopt a consistent and coherent program of curriculum reform" (p. 54). In 1932, the new Committee on the Relation of School and College was charged with addressing this problem. Their plan involved the agreement of colleges to accept graduates from 30 "unshackled," or experimental, high schools over an eight-year period. This plan was called the Eight-Year Study. The intent of this study was to compare the 3,600 students from the experimental high schools with students educated in traditional academics to demonstrate that the traditional method of college preparation did not offer students any particular advantages. Examples of curriculum innovations in experimental schools included a complete curriculum overhaul around "areas of living." In the end, the students in the experimental schools showed little academic difference in performance from their counterparts. Supporters of the experimental approach were primarily elementary and secondary spokespersons, while academics defended the traditional "organized disciplines of knowledge," (p. 56) resulting in an increase in the rift between college and high school.

In 1945, a White House conference on Vocational Education In The Years Ahead (Klieberd, 2002) stated that 20% of high school students were being well prepared to enter college and 20% were receiving solid vocational training, but 60% "were not receiving the life adjustment training they needed" (p. 57). According to Kliebard, Life Adjustment Education was never clearly defined, but many of its programs sought to replace the traditional forms of study established by the Committee of Ten. The mission of Life Adjustment Education was the development of healthy, patriotic, wholesome citizens, without a mention of academics. The split between high schools and colleges was now an abyss. The Life Adjustment Education movement was the final straw that stimulated academics to challenge K-12 reform movements. Kliebard credited Arthur E. Bestor, Jr., from the University of Illinois, with charging the movement as being anti-academic. Bestor accused proponents of Life Adjustment Education of belittling the 60% majority who were not college-bound and reverting to a superior class system of education, and suggesting that the 60% were incapable of academic training. In spite of the criticism, academics won their argument. The launch of Sputnik in 1957 shifted the academic argument to the context of the Cold War and technology. Kliebard noted that, by the 1980s, criticism of K-12 education had become a pastime, and much of the blame for weaknesses in education had moved to college and university departments of education and their teacher preparation programs.

In *Schooled to Order,* Nassaw (1979) examined accusations from the early 1900s that traditional high schools were making students unfit for work by placing too much focus on academics. This time period marked the beginning of the Industrial Age. In 1912, the National Association of Manufacturers (NAM) Committee on Industrialization attempted to address these demands. The outcome "classed," or grouped, children into academic tracts: the abstract-minded and imaginative children, the concrete or hand-minded children, and the great intermediate class (as cited in Nassaw, p.127). Nassaw stated that "[t]he educational establishment had always listened to the business community . . ., what was good for business was good for the larger society, employees and employers alike" (p. 129).

Nassaw (1979) reported that, because students were separated into different tracks, educators had to decide between training students to be independent and self-directed individuals or dependent wage earners. The thinking was that students with different futures "deserved" different educations, as they were of a different mind and demonstrated their choices through course enrollment. Nassaw noted that, in the early 1900s, the percentage of students taking Latin, algebra, geometry, and German increased by an average of 11% over a 15-year span. Children of the working class were showing that they wanted the same kind of education provided to middle-class children. In spite of these strong indicators of student choice, by the mid-20th Century, the educational establishment that was still committed to tracking students felt compelled to divert students from

traditional academics to a curriculum that was a better fit for their vocational needs: bookkeeping, stenography, typing, business, manual training, and domestic science. According to Nassaw, the educational system considered itself socially efficient as it identified and divided students into mental programs and manual programs of instruction. Eventually, standardized test results assisted with the identifying process. Students who lasted the longest in school and demonstrated the highest grades were deemed the most capable.

The academic push after Sputnik was followed by another pendulum swing in the 1980s. In "Education and the Sony War," Spring (1984) discussed the increase of baby boomers flooding the labor market in the '70s. This influx of workers forced a decline in wages and jobs, and triggered government policies like the Youth Employment Act of 1977 that focused on career and vocational education. To take advantage of the huge pool of workers and low wages, businesses chose to increase the number of shifts rather than invest in better equipment. Spring pointed out that the outcome of this change was a drop in U.S. productivity; additional workers were using old machinery for more shifts and were producing the same level of output as countries using more modern equipment.

By the mid '80s, most of the baby boomers had already entered the workforce and the number of new workers entering the labor market had dropped by two million (Spring, 1984). Businesses, higher education, and the military were now competing for the same limited group of entry-level workers. Out of

fear of wages increasing due to the labor shortage, businesses began working with schools to improve the education of those who would have been marginally employable in the 1970s. Spring recognized partnerships to increase performance developing through adopt-a-school programs, Jobs for America's Graduates, and other joint efforts. However, the declining productivity of the 1970s raised fears of international competition and caused businesses to call for more focus on technology that translated into increased educational requirements in math, science, and other academic fields.

History has shown that the public school system has fallen under the control of the profit motives of U.S. industry, and, in spite of its responsiveness to economic trends and business demands, the public school system has been treated as a failed institution (Spring, 1984). Spring discussed the claims of the National Commission on Excellence in Education that were published in *A Nation at Risk*, a report that focused on the value of investing in education as a solution to U.S. economic problems. The report stated that U.S. lags in global trade were blamed on the failure of public schools, and the solution to the problem of international trade was school reform. Spring argued that the National Commission on Excellence provided no evidence to substantiate the claim that U.S. economic problems were rooted in the development of human capital (e.g., public education). Over the years, school curricula have been molded and contorted to meet the demands of various social, economic, and political issues of the time. Public schools have been called on to end poverty, improve situations for

minorities, reduce unemployment, and most recently, to meet the need for technological development to improve international trade. Spring challenged that the National Commission on Excellence did not consider that this might be the reason public education was in the state it was in. Instead, the Commission wanted high school requirements to include four years of English, three years of mathematics, social studies, and science, and a half-year of computer science, all reminiscent of the controls imposed by the Committee of Ten in 1893. Spring posed a critical question that had no single answer in the face of the fluctuating goals of school reform: What knowledge is of most worth?

*A Nation at Risk*, published in 1983, warned that without major reforms in the American educational system, a system which was sorely lacking in its academic preparation of students, we would no longer be able to maintain our economic position in the global economy (Dworkin, 2001). In reaction, government-mandated reforms were rushed into place, and reform trends have continued to impose standardized curricula and rigorous requirements for student and teacher performance on school districts across the country. Dworkin reported that "the goal of the first wave of [government mandated] reforms was to guarantee that only competent teachers were in the classroom and that only educated students graduated from school" (p. 72). The first attempts at reform failed. In the late 1980s, the second wave of reform, site-based decision making, shifted accountability to the local level. Control of curriculum and instruction was returned to teachers and principals, but with that shift came the notion that teachers

and principals should be held accountable for student learning outcomes.  Dworkin

stated that these efforts failed to boost student achievement to levels expected by

the government, business, and the public.  Subsequently, by the mid '90s, school

reform moved to high-stakes testing, and control was shifted to the states.

Standardized achievement tests were used to rate schools and school districts, and

students, teachers, and school administrators were held accountable for the results.

In Oregon, the Certificate of Initial Mastery (CIM) was implemented in the

early 1990s (Oregon State Legislature: Index of /99orlaws, 2007).  Through the

accompanying standardized assessments, the state held schools accountable for

their performance.  The *No Child Left Behind Act* (United States Congress, 2001)

has added the requirement that schools meet Adequate Yearly Progress (AYP) or

risk losing funding and other kinds of federal support.  AYP measures the

percentage of students taking state tests and the percent meeting benchmarks for

the total school population, as well as for each subgroup (special education, second

language, racial groups). Instead of being stimulated to rise to the challenge,

schools with high numbers of second language students who lack the language

background to succeed on state assessments, and special education students whose

disabilities impact their performance face consequences if not enough of these

subgroups meet benchmarks.   This statement is supported by data from the

Oregon State Report Card (Oregon Department of Education, 2008), which is

representative of data collected by each state.  It could be argued that the

restrictions imposed by AYP far outway the advantages that accountability can

bring to improving student performance, suggesting that the reforms of the *No Child Left Behind Act* are yet another failure on the long line of attempts to force schools to meet performance objectives established by legislators and other non-educational bodies.

In 1988, the Commission on Work, Family, and Citizenship, funded by the William T. Grant Foundation, reported on a group of students who became labeled "the forgotten half," shorthand for noncollege-bound youth (Adelman, 1993; William T. Grant Foundation Commission on Work, Family & Citizenship, 1988). Longitudinal studies conducted by the United States Department of Education tracked a number of youth who found themselves in "the forgotten half." Adelman's examination of these studies confirmed that, of the three million high school graduates in 1972, the forgotten half was more than 55%. Forty percent of the forgotten half did not continue formal education or receive training in the military. Another 15% earned less than a semester's worth of credits beyond high school by the time they were 30. An analysis of these students showed that they received very little math and science, had low scores on basic skills tests, made no attempt to return to school, saw more unemployment than their counterparts, and experienced lower satisfaction with jobs and career paths (pp. 1-2).

Adelman (1993) recognized that, by 1982, the college graduation rate had risen by 8%. Students receiving some postsecondary education by their late 20s had increased by 4-5%. By all indicators, "the forgotten half" had shrunk to less than 45% of high school graduates. Adelman stated that Pell Grants and

Guaranteed Student Loans made the difference, making it much easier to attend college in the 1980s.  Women's enrollment in college rose twice as much as men's, while the overall college enrollment rates rose by 10% between 1972 and 1989 (p. 2).

National longitudinal studies conducted by the U.S. Department of Education showed that men were involved less frequently in higher education than were women (Adelman, 1993).  Three studies followed specific groups of students for 12-15 years, beginning with twelfth graders in 1980, tenth graders in 1980, and eighth graders in 1988.  Participation data showed that 85,000-100,000 people, yearly, no longer received a college education through the military, and the vast majority of these people were men.  Most school-to-work transition programs involved combinations of academic and vocational education, on-the-job mentoring, and coordinated programs between community colleges and businesses.  Limited data showed that participants in these programs were primarily women.  Adelman's data revealed a shift in "the forgotten half," showing that noncollege-bound students were mostly men.  Adelman reported that a review of interview transcripts from Pennsylvania State University showed that men were consistently less certain of their place in a learning community than were women.  However, data also suggested that involvement in small study-work groups and task-oriented teams worked to help men remain engaged and involved in school (p. 2).

Wenrich's (1996) investigation stated that most high schools focused on preparing students for college, which was supported by data showing enrollment in college preparatory classes had increased while enrollment in vocational education had declined.  Wenrich noted a 1995 study by three Pennsylvania State University researchers that examined the effectiveness of college preparatory classes for those students who would otherwise have taken vocational education coursework. Participants were assigned to three levels of academic competence:  adequately prepared or academically competitive (30%), marginally prepared or semi-competitive (24%), and unprepared or noncompetitive (46%).  Of the 46% considered unprepared, 29% went directly to work after high school, with most holding low-paying jobs in the service sector that provided no training for better career opportunities.  Wenrich stated that researchers found that only 52% of the unprepared students who went on to college returned for their sophomore year, 46% of which had received financial aid (pp.  561-562).

Some states have extended school reforms to include career and technical education (Lewis, 2004).  North Carolina developed 129 career and technical education courses through its Vocational Competency Achievement Tracking System to ensure consistency in preparing students for the workplace.  Each course included curricula, instructional strategies, and item banks for teacher-made tests. Each student leaving a technical program was required to take a criterion-referenced assessment at the end of each course.  Bix (2000) reported that in Pennsylvania, all students leaving career and technical education programs were

tested.  Test results from the National Occupational Competency Testing Institute were used to evaluate local programs.

An interesting phenomenon developed as technology moved further into the workplace.  Bix (2000), in *Inventing Ourselves Out of Jobs,* examined 52 years (from 1929 to 1981) of technological unemployment.  She noted that a definitive empirical method of measuring the impact of technology on employment was missing.  Leaders in corporate America claimed that expanding production with labor saving technology lowered prices, increased consumer buying, and subsequently increased employment.  In Bix's examination of this history, which showed that unemployment was actually increasing, no one called for a halt to technological development.  Business leaders believed that job loss and hardship were inevitable consequences of the Information Age, but that the advantages of expanded production and the resulting explosion of consumer goods were worth these side effects.

The promises of jobs and prosperity that accompanied each new technological wave nearly always fell short of expectations (Bix, 2000).  The rush to meet military employment needs during World War II quelled the rage of the 1930s over the extreme unemployment of the Industrial Age and worldwide job shortages of the Great Depression.  Bix stated that the technology debate re-emerged during the 1950s and 1960s when automation triggered economic growth and created a new group of the unemployed.  In the late 1970s and 1980s, the computer revolution was coupled with down-sizing, globalization, and the

widening income gap, confusing the issue about the impact of technology on the populous.

In the *Overworked American,* Schor (1992) examined the impact of technology and the Information Age on unemployment rates and the underemployed. Technology and labor-saving devices had been promoted as time savers that would buy back our leisure time, but streamlining work had created a bigger problem for the economy. The proportion of the labor force that could not get as much work as they wanted or needed (the underemployed) more than doubled between 1969 and 1987. At the same time, a dichotomy in the workforce was growing. Manufacturing lost over a million jobs in the 1980s, while overtime pay rose by 50% between 1980 and 1987. At the height of a string of business expansions identified in 1969, 1973, 1979 and 1987, the proportion of workers without jobs increased to a peak of 6.1% in 1987. These data have been reinforced by numerous authors, including Goldschmidt (1997), who pointed out that 22% of those employed full time and earning minimum wage were below the poverty level (p. 193). (Goldschmidt acquired these data by following high school sophomores from 1980 to 1986 to track their transitions from school to work.) Table 2.1 illustrates a portion of Shor's investigation and notes a four-year sampling of the percentage of the workforce that experienced unemployment and underemployment.

Table 2.1.  Fraction of Labor Force Experiencing Unemployment and
　　　　　　Underemployment

|  | 1969 | 1973 | 1979 | 1987 |
|---|---|---|---|---|
| Total unemployed & underemployed | 7.2 | 9.8 | 16.2 | 16.8 |
| No Work All Year | 0.4 | 0.7 | 0.8 | 1.6 |
| Part Year/Part-Time | 1.0 | 1.8 | 4.0 | 4.4 |
| Full Year/Part-Time | 0.2 | 0.3 | 0.9 | 1.5 |
| Part Year/Full-Time | 5.6 | 7.0 | 10.5 | 9.3 |

SOURCE: Author's estimates from *Current Population* Survey, from Schor, 1992 (p. 40)

Schor (1992) sited our capitalist economy as the root of failure of the U.S.

labor market to provide work for its population.  Schor maintained that capitalism

is about profitability, and not employment.  Interest rates, investments,

productivity, foreign competition, and the changing face of companies have

affected the level of employment.  These pressures on businesses come with a

focus on cutting costs.  Employees are expected to work harder, faster, and longer

because "employers have strong incentives to keep hours long" (p. 41), a system

that shortcuts the possibility of new job creation.  Are entry-level workers prepared

to deal with these levels of unemployment and underemployment?  Are schools

providing them with the necessary skills to remain employed?

*Linking Education and the Economy*

The decades-old pressure on education to produce high-quality workers is

directly reflected in economic trends and subsequent economic policy.  In *Critical

Issues in Education: Dialogues and Dialectics,* Nelson et al. (2000), discussed the

dichotomous influences that business can have on education. The authors

recognized that employment in the mid to late 20th Century had shifted from

manufacturing to service. White-collar jobs increased 25% between 1940 and the

mid 1980s, while blue-collar jobs declined 15% over the same time period,

translating to a workforce composed of 27% blue collar and 70% white collar

workers. Throughout this time, businesses were reporting a shortage of skilled

workers. Nelson et al. noted that, by 1998, almost 70% of Chief Executive Officers

(CEOs) claimed lower company earnings because of workers' educational defects:

"Public education today is totally inadequate to the task. Our schools are not

designed for the workplace" (p. 316). The authors sited many references that

claimed the business community would launch the redesign of schools, use

assessment scores in hiring, and provide the necessary resources to boost academic

performance, none of which has happened. Instead, we have seen education

scramble to stay ahead of the powerful voice of business, as evidenced by the

string of unsuccessful and uncompleted school reform movements over the last

century.

In "The Historic Separation of Schools from City Politics," Menefee-Libey

et al. (1997) used case studies to examine national patterns in school governance

from the mid-1800s to the present. The focus of their investigation was to learn

how education and the economy became separated. The authors identified the

Progressive reformers of the early 20th Century as the initiators of separating

school policy from local government, connecting education instead to the idea of

professionalism (e.g., educators are professionals and should manage themselves).

The article discussed the development of school boards, superintendent-based

management teams, and an array of social services for children based within the

school system. The authors noted that, beginning in the mid-1950s, governments

imposed categorical programs around poor, minority, special needs, and second

language children that fragmented the focus of school districts. Many of these

programs were changed by improvisational politics: litigation around race

relations and special education, collective bargaining, and initiative processes such

as Proposition 13 in California. Policymakers and activists rarely made any effort

to reconcile their programs with existing policy, other reform efforts, or broader

efforts to drive urban development. Menefee-Libey et al., identified the long-term

effect of these movements and reforms as a reduction in the extent to which

schools could autonomously generate and control the use of their financial

resources. The most damaging outcome was that the public blamed schools for

creating their own problems and seemed to be unaware of any connection between

schools and economic well-being.

Stilwell (1998) added to this argument in a discussion of the impact of

public education on the Australian economy in *Social Alternatives*. Much like the

United States government, the Australian government had been voicing concerns

about poor literacy standards, an increase in unemployment among graduates, and

parents leaving the public system to enroll their children in private schools. At the

same time, government funding for education had been slashed.  Stilwell, an

economist, voiced three major concerns:

> (1) Faulty economic theory and policy are behind the neglect of public
>
>     education.
>
> (2) Lack of funding is transforming educational institutions.
>
> (3) 'Selling' education in terms of privatization leads to greater economic
>
>     insecurity and inequality. (p. 44)

Stilwell advocated that unemployment could only be turned around by spending

money, with a fair share going to public education.  He saw government spending

that generated jobs, incomes, and tax revenue as an investment in the future.

Citing a phenomenon associated with a recent rise in unemployment, Stilwell

noted an increase of 44% in college enrollment in Australia that was coupled with

a decrease of 18% in government support for the unemployed.  Noting that the

unemployed turned to education in times of crisis, Stilwell wanted Australia to

work toward becoming a qualitative world leader by investing in education to

achieve a highly skilled economy.  According to Stilwell, Australia could do this

by not treating education like a market system, and by not expecting educators to

change directions at the whim of economists and business leaders.  Stilwell's

position was that cuts in education had no economic rationale.  Instead, cutting

education impaired productivity in the long term.  Stilwell promoted refocusing

the economy to emphasize three major points:  (1) nurturing personal and

community development; (2) building capacity for balanced and sustainable

economic development; and (3) sharing income to reestablish social justice and social income (p. 46).

In 1997, *Education and Urban Society* (Russo, C.J., 1997) devoted an issue that addressed the premise of education as a basic industry. The editors assembled articles largely from a pool of researchers in the Los Angeles area who were exploring the connection between education and the economy. Their goal was to increase public support for education by defining and clarifying the impact of education on the economy. To establish a rationale for this argument, Kerchner (1997) pointed to a long-range cycle of educational change in the United States in which he proposed that the fates of cities and schools were inseparable. Kerchner based his view on historic ties to the last great educational reform movement in the early years of the 20th Century, also known as the Progressive Era. Three common elements linked the Progressive Era with today's school reform: a profound debate about learning, questions about the organization of schools, and our changing ideas about governance. Kerchner's aim was to explore basic industrial connections between schools and communities that he suggested should be reflected in educational policy. He framed his argument in the language of economics, identifying *linkages* or connections between the economy and education. Economic linkages involved occasions where school policies and practices motivated people to increase their investment in learning (backward linkages) and when schools caused colleges or employers to value their graduates more highly and/or invest in their future education (forward linkages). Kerchner stated that

linkage was important for economic leverage, and it allowed schools to target their activities to strengthen these links.

Kerchner (1997) also named a problem that could impact the assessment of school performance as it relates to business demands.  Educators and policymakers currently evaluate students on how they did in school, not on how well they do after they leave school.  Connecting education to the economy requires a concrete image of what it takes to succeed in the local economy and knowing whether students are prepared for that   success in schools.

Kerchner (1997) contended that schools should be treated as "asset-based community indicators" (p. 435). This could be accomplished by developing education indicator systems that view community capacity alongside school goals and outcomes.  This process included the monetary contribution schools make to local economies through local purchases of goods and services, employment of local residents, targeted contracts for goods and services that support new businesses, and investment of resources in local financial institutions.  A school district is generally one of the largest employers in a community; therefore, Kerchner and other authors in the theme issue of *Education and Urban Society* that addressed education as industry argued that schools should be treated as contributing industries by local governments.

In the same issue of *Education and Urban Society*, Picus and Bryan (1997) focused on the economic impact of public education on the Los Angeles region. The authors pointed out that, amazingly, few data existed to show the role

educational expenditures played in the growth of the economy.  To reinforce their point, they hypothetically placed the Los Angeles Unified School District on the *Fortune 500* list of the largest U.S. companies, demonstrating that it would rank 22$^{nd}$ in the nation in size, between Hewlett Packard and Metropolitan Life.  This, and a number of other quantitative comparisons, reinforced their premise that school districts should be treated as big businesses.

Picas and Bryan (1997) stated that the U.S. Department of Education used three indicators of public efforts to fund K-12 education:

- National Index of Public Effort – dollars of revenue per student divided by personal income per capita (25% in 1993).

- Public Revenues per Student ($5379 in 1993).

- Educational Revenue as Percent of Gross National Product (4% in 1993, 11.7% of government spending). (pp. 442-443)

The authors devoted considerable effort to educational comparisons and expenditures in Los Angeles, noting that the five-county area around Los Angeles is the 11$^{th}$ largest economy in the world.  As an example, Los Angeles County contains 3.2% of the nation's public school children, and California spends 3.6% of the state's gross domestic product on education.  The authors also note that the employment of adults is likely the most important economic concern of local governments.  Picas and Bryan recognized that the importance of the relationship between education and employment had not been reflected in the amount of

money that California had spent on education relative to the value of adult workers to local governments.

Picas and Bryan (1997) turned again to economic theory to point out the substantial returns to individuals and society from investing in education. They also pointed out how difficult these connections had been to quantify, as summarized in the following:

- *Human Capital* – Increased talents and abilities can lead to enhanced economic productivity.

  PROBLEM – How much investment will generate a higher return?

- *Productivity Enhancements* – (1) Firms that employ well-educated individuals will be more productive and successful, and (2) Multiplier effects describe the number of times a dollar spent for resources or wages is used in or returned to the economy (teachers using their paychecks to buy groceries locally).

  PROBLEM – (1) Requires long-term analysis, and (2) not easily quantifiable.

- *Secondary Effects* – Long-term effects include economic multiplier effects, worker productivity, and improved social considerations.

  PROBLEM – Effects not easily quantified, especially when measuring long-term social benefit. (pp. 448-450)

Picus and Bryan (1997) concluded that their research raised more questions

that could be addressed through the collection of additional data: potential

productivity improvements in local business, and personal satisfaction

(consumption) gained by individuals resulting from their school experience. They

asked:

> [M]ight it be more economically efficient to use the money used to lure firms to an area to hire additional teachers for the public schools? Would the improved student performance that we hope would result lead to more productive workers who would attract new business to the area without subsidy? (p. 451)

Additional support for the argument presented by Picus and Bryan (1997)

was documented by Smith and Scoll (1995) in their report on President Clinton's

Human Capital Agenda. They noted the fast growing income gap between

college- and noncollege-educated workers, fueled by the changes that technology

was bringing to the way people worked. The authors stated that successful

employment in the new economy requires that education emphasize higher-order

thinking skills, real life application of skills, and high standards and expectations

(p. 391). The authors referred to four core ideas contained in the Clinton

administration's K-12 agenda: (1) all children can learn to a high standard,

(2) curriculum matters, (3) develop more broad-based assessments that reflect

deeper content and model good practice, and (4) ownership and commitment by

those centrally involved is critical to the success of reform. Smith and Scoll noted

that the implementation of the Human Capital Agenda was supported by Goals

2000, the Improving America's Schools Act, and the School-to-Work Opportunity

Act.  However, the authors reported that Congress appropriated only a modest

fraction of the education resources proposed by the administration.  President

Bush's *No Child Left Behind Act* (United States Congress, 2001) changed the

focus once again, tightening the assessment and accountability collar and reducing

funding dramatically.

On a much broader level, the Organization for Economic Cooperation and

Development (OECD, 1994a) took an in-depth look at technological change across

25 member countries and published the findings in Part I of a two-part

investigation.  This expansive study focused on unemployment problems that were

appearing as an "information society" was developing in which the majority of

workers would be producing, handling, and distributing information.  Many types

of data were analyzed that affected product development, production, and

employment.  The findings showed that it has been particularly difficult for OECD

economies to absorb new technology or to implement technology efficiently, and

these factors have affected employment and production.

Much of the OECD (1994a) discussion revolved around learning.  Much

trial and error and interactive learning take place when implementing new

technology.  The OECD has recognized that both the producers and the users of

products are involved in this learning curve:

> The need for individuals to engage in lifelong learning has become more and more obvious . . . . Long-term changes in the importance of knowledge and the lack of institutional adaptations may be at the very root of the present employment problems. If this is the case, OECD economies are confronted by a new kind of "technological unemployment" which can be attacked only by institutional change at the national as well as the international level. (p. 130)

A good share of the data in the OECD (1994a) study concerned employment and production statistics in industrial and semi-industrial economies. The OECD investigation uncovered a surprising lack of information: few comprehensive data existed on the extent and intensity of information technology (IT) used across the economy, and little information was available comparing the impact of IT use on an international level. These findings are surprising given that the OECD stated that approximately half of the growth in real output in the U.S. in the last three decades has been attributed to the growth in computer capital. In 1986, Leontief and Duchin (as cited in OECD, 1994a), conducted a major longitudinal study in the United States that examined the anticipated effects of computer technologies on employment from 1980-2000. The findings emphasized significant job displacement due to the slow change in orientation of education, training, and guidance. Projections anticipated shortages of professionals, clerks, and managers: ". . . it seems urgent to adapt education and training systems as well as individuals' occupational expectations" (OECD, 1994a, p.142).

Part II of the OECD Jobs Study (1994b) took a detailed look at job skills and competencies, making specific connections between the economy and

education. The authors promoted examining the success of education and training in serving both economic and non-economic objectives in tandem with looking at the outcomes of analyses of the strengths and weaknesses of education, aiming toward the development of lifelong learning. If skills and competencies are to enhance economic and labor market performance, human resources must focus on a lifelong development process.

The neo-classical growth model developed by Solow in 1957 (as cited in OECD, 1994b, p. 115) is the traditional foundation for examinations of the skills and competencies of workers. Human capital was defined in the Solow model as the summation of skills and competences, and related knowledge and understanding, that a worker contributed to the labor market. Measuring human capital became challenging for researchers. Analyzing the depth and breadth of skills and competences was a function of both formal education and on-the-job learning. Relying on educational attainment assumed that all educational institutions and preparations were equitable, within and across countries. This approach disregarded or understated experience, further education, and training. However, economic analysts used educational attainment frequently because it was fairly consistent, correlated well with occupation and earnings, and could be used to predict participation in further education and training.

Many studies cited in the OECD document (1994b) examined the relationship of education and the economy. A number of international studies cited a robust contribution of education to economic growth. The findings

suggested that investing in education and training resulted in higher output and productivity. Further examinations showed that people who failed to complete upper-secondary education or vocational preparation had markedly lower earnings and higher unemployment. The general trend in all member countries, irrespective of their educational and training systems or the distribution of workers across the attainment categories, showed that mean earnings differences widened persistently from the more- to the less-educationally qualified. Table 2.2 represents a group of data that reflect men aged 25-34 who have entered the workforce with no job qualifications. According to OECD research, this group of workers would be most affected by changing market forces because they have less experience, less seniority, and less on-the-job training than older workers. The data in the table represents mean earnings ratios for specific periods of time. The ratios were calculated by dividing mean earnings for university-educated workers by mean earnings for workers with high school diplomas. Workers with no job qualifications (Level A) showed mean earnings ratios that increased as the level of entry-level qualifications fell. Workers entering the U.S. labor market with no qualifications (Level A) in the 1990s were especially disadvantaged. The mean earnings ratio (2.21) represented a wider spread between the entry-level qualifications for college-educated and high school-educated workers (p. 117).

Table 2.2.  Representations of Earnings Differentials of Men Aged 25-34

| Countries and 25-34 age group | Early 1970s | Late 1970s | Early 1980s | Mid/Late 1980s | Early 1990s | Five-year Change 1970s | Five-year change 1980s/early 1990s |
|---|---|---|---|---|---|---|---|
| **Level A** (no job qualifications) | | | | | | | |
| Australia | 1.78 | 1.55 | 1.39 | 1.44 | 1.54 | -.23 | +.08 |
| Japan | 1.16 | 1.15 | | 1.21 | 1.24 | -.01 | +.03 |
| Netherlands | | | | 1.58 | 1.52 | | -.06 |
| United States | 1.6 | 1.69 | | 2.08 | 2.21 | +.09 | +.2 |
| **Level B** (some work experience) | | | | | | | |
| Australia | 1.63 | 1.41 | 1.2 | 1.37 | 1.35 | -.22 | +.08 |
| Japan | 1.11 | 1.1 | | 1.15 | 1.16 | -.01 | +.02 |
| Netherlands | | | | 1.4 | 1.38 | | -.01 |
| United States | 1.28 | 1.27 | | 1.53 | 1.64 | -.01 | +.14 |
| **Level C** (substantial work experience) | | | | | | | |
| Australia | 1.27 | 1.29 | 1.08 | 1.21 | 1.28 | +.02 | +.12 |
| Japan | 1.11 | 1.09 | | 1.12 | 1.12 | -.01 | +.01 |
| Netherlands | | | | 1.28 | 1.17 | | -.11 |
| United States | 1.17 | 1.18 | | 1.32 | 1.4 | +.01 | +.08 |
| Ratio= mean earnings for university education/mean earnings for upper secondary completion (HS diploma) | | | | | | | |

SOURCE: modified from OECD, Part 2, 1994 (p.  117)

The OECD (1994b) examined the impact of education on productivity.
Middleton et al. (as cited in OECD, 1994b, p.119) suggested that education does
enhance productivity by providing knowledge and skills that can be used at work.
The authors believed that knowledge and skills acquired through university
preparation improved the ability of individuals to communicate and coordinate
with each other, and enabled workers to learn new tasks and acquire new
information.  The OECD also looked closely at Further Educational Training
(FET), which provided training for workers at the job site, as an avenue for
advancing productivity.  Of particular concern was the low representation of
unqualified workers in FET.  Contributing factors that affected the lack of

participation in training were higher labor turnover and the uncertain wage return

from FET.  However, it was discovered that workers who were learning new tasks

on the job were less inclined to leave a company, primarily because of higher job

satisfaction and improved working conditions.

The connection between education and technology has been investigated

from differing perspectives for many years.  Leontief and Duchin (1986), in *The*

*Future Impact of Automation on Workers,* applied a traditional input-output model

to data from the U.S. Bureau of Labor Statistics.  They established a number of

projections about the composition of the workforce.  They estimated that by 2000,

20% of the labor force would be professionals (+4.4%), and clerical workers

would be reduced to 11.5%

(-6.3%).  The authors anticipated that computer specialists, engineers, and

construction workers would be in greatest demand, and clerical and skilled metal

workers would be the least employable.  In most sectors of the economy, increases

in output were accompanied by reductions in employment.  The impact of robotics

was dramatic, but it was not unexpected.  Between 1978 and 1990, 400,000

workers were affected by robotics, and that number increased to two million

between 1991 and 2000.

Leontief and Duchin (1986) asserted that concerted efforts in education and

training could facilitate the successful transformation of the labor force.  The

authors anticipated that the growth and quality of computer-based education and

its delivery would become a part of government policy and a component of

corporate and trade union strategies.  Their data showed that 75% of firms in one survey provided employees with internal training programs in basic skills.  AT&T, for example, spent $6 million annually to train 14,000 workers in basic reading and math.  Their data also showed that 35% of companies provided some high school level training (p. 93).

In a Canadian study titled, "Surveying the 'Post-Industrial' Landscape: Information Technologies and Labour Market Polarization," Hughes and Lowe (2000) examined two dimensions in the technological workplace that separated "good" and "bad" jobs – skills and earnings.  The literature review on skills research that Hughes and Lowe included in their study showed extensive studies of economies in the United States, Canada, the United Kingdom, and the grouping of G-7 countries (United States, Japan, Germany, France, Italy and Canada) with disparate findings regarding skills affecting job quality.  Findings on earnings polarization were more cohesive around earnings trends, but were not as clear on the underlying factors.  Factors ranged from technological change, globalization, and shifts in labor supply and demand, to business cycles.

The data presented in this section has shown that jobs have gone away with the influx of technology at work. The income gap is rapidly increasing and the nature of work is changing quickly.  Economists and educators are concerned about job loss and about the role of education in this process, but what about the voice of business?  What do businesses want?  What are businesses expecting from workers, and who is   responsible for meeting those expectations?

*Business Demands*

Businesses site many shortcomings in entry-level workers that are causing the U.S. to lose its competitive advantage. The list of desired traits is long and is compiled in Table 2.3, representing several authors' work on the qualities businesses expect from new hires, recommended solutions to increase the number of qualified workers, and systemic weaknesses that impact the quality of workers. Nelson et al. (2000), as an example, emphasizes the need for workers to be (a) competent in basic skills and comprehension, (b) able to work collaboratively, and (c) self-motivated, mentally agile, and reliable.

Table 2.3.  Qualities that Businesses Expect in New Hires

| Nelson et al. (2000) | Clinton's Human Capital Agenda (Smith & Scoll, 1995) | Scheetz (1998) | Australian Department of Education, Employment, & Workplace Relations (2000) |
|---|---|---|---|
| Basic skills | Higher-order thinking skills | Real-world work experiences | Communication skills |
| Comprehension | Real life application of skills | Technical skills | Problem solving |
| Work collaboratively | High standards | Leadership qualities | Team work |
| Self-motivated | High expectations | Personal presentation | Initiative |
| Mentally agile | | Attitude | Client focus |
| Reliable | | Communication skills | |
| | | Adaptability, drive, and initiative | |
| | | Preparation for interviewing | |
| | | Career interests | |
| | | Desire for long-term commitment | |
| | | Strong work ethic | |
| | | Willing to take risks | |
| | | Self-motivated | |
| | | Common sense | |

| *Recommended Solutions* | | *Systemic Weaknesses* |
|---|---|---|
| William T. Grant Foundation Commission on Work, Family & Citizenship (1988) | | Organization for Economic Cooperation & Development, Part 2 (1994b) |
| Basic skills | | No vocational preparation |
| Apprenticeships | | Weak educational foundation |
| Pre-employment training | | Long, recurring episodes of joblessness |
| Improved vocational education | | Excessive turnover |
| Better career counseling | | Working in jobs unrelated to vocational preparation |
| Incentives from businesses & mentors to do well in school | | Many inadequately qualified adults |
| | | Small firms train too little |
| | | All firms may under-train |
| | | Less qualified workers are far less likely to receive on-the-job training |

The examination of literature revealed that business solutions for educational problems were generally based around efficiency: apply business management techniques, improve technology, reduce costly employees by delivering instruction to larger groups of students using video equipment, manage supplies separately, and use test scores in hiring practices. The counterargument articulated by Nelson et al. (2000) was that those who controlled test design and use could manipulate employment levels, wages, benefits, labor contracts, profits, and school curricula.

In an extensive examination of worker skills and competencies, the London-based National Institute of Economic and Social Research (NIESR) examined the productivity of work groups in case studies across several countries (as cited in OECD, 1994b). Substantial skill differences were discovered. These differences were mainly attributed to initial education and training that varied by country, not to later training provided by the employer. NIESR findings suggested that "adequate skills and competences yield higher productivity only in the context of good overall human resource management and effective business strategy" (OECD, 1994b, p.126).

Brown, Reich, and Stern (as cited in OECD, 1994b) examined American firms and the role of human resource variables in explaining differences in high performance work organizations. These organizations demonstrated a capacity for problem-solving and continuous improvement of products and production. Brown et al. (as cited in OECD, 1994b) concluded that training and multi-tasking were

important, but employment security was more important to productivity than either training or employee involvement.

The OECD (1994b) study concluded that there was no one ideal profile of workforce qualifications and no single level of educational attainment that was tied to better performance.  In looking across the 25 countries involved in the OECD, the returns on earnings and lower unemployment associated with more education broadly suggested that the demand for less-educated workers has declined and would continue to decline.  However, the authors concluded that little evidence existed to suggest that more education was better.

*Recruiting Trends* is a national study conducted by Career Services and Placement at Michigan State University (Scheetz, 1998).  This study is regarded as the leader in analyzing the job market for four-year college graduates.  The most significant elements of successful interviews, according to 74 surveyed employers, included these traits that were identified by 10 or more participants:

- Real-world work experiences (33).

- Technical skills (12).

- Leadership qualities (14).

- Personal presentation (24).

- Attitude (10).

- Communication skills (33).

- Adaptability, drive, and initiative (14).

- Preparation for interviewing (10).

- Career interests (10).  (pp. 21-23)

Academic skill areas and job performance competencies cited by participating employers as desirable in new hires included writing skills, speaking and presentation skills, telephone communication skills, and supervisory and management skills.  Employers also identified areas of personal focus that included the desire for a long-term commitment, a strong work ethic, willing to take risks, self-motivation, and common sense  (Scheetz,  pp. 16-17).

The Enterprise and Career Education Foundation (ECEF) (Australian Department of Education, Employment, & Workplace Relations, 2000) is an Australian venture that connects schools with businesses and promotes employer involvement in education.  In an ECEF publication, employers in England, Sweden, and Australia indicated that "schools have failed to provide the aptitudes and attitudes required by industry, and this will be turned around only by industry becoming involved in education and training" (p. 2).  The ECEF suggested that a recurring theme around work is the importance of employability skills and the relevancy of schooling to work.  Employers in all three countries identified communication, problem-solving, working in teams, initiative, and client focus as necessary skills for employment.  The ECEF reported that a number of businesses in Sweden have established secondary schools to address the need for a skilled workforce and the perception that the Swedish educational system has not been responsive to business needs.  An example is the ABB Industrial School that

focused on preparation for working life.  Necessary skills were identified as independence, problem-solving ability, creativity, social competence, flexibility, and engagement (p. 3).

*The Forgotten Half* (Adelman, 1993), produced by the William T. Grant Foundation Commission on Work, Families and Citizenship, stated that a larger percentage of noncollege-bound students were finding it harder to stay afloat. The recommendations of the Commission to increase the employability of young people included:

- Intensive training in basic skills.

- Apprenticeships.

- Pre-employment training.

- Improved vocational education.

- Better career counseling.

- Incentives from businesses and mentors to do well in school.

*The Forgotten Half Revisited* (Helprin, 1998) is a collection of essays that followed up on the predictions of the first publication 10 years earlier.  As expected, young workers without college or career training were experiencing longer and longer periods of unemployment or temporary employment.  Table 2.4 captures the data.  Note that the percentage of young people over 16 with a high school diploma or GED had increased by 3%.  A much bigger concern was the dramatic rise (61% since 1950) in teen parents in the last 40 years, a statistic that is directly reflected in the growing income gap.

Table 2.4.  U.S. Statistics on Employability of Noncollege-Bound Youth

| % over 16 with HS diploma or GED | 1990 | 29.2% | 1997 | 32.1% |
|---|---|---|---|---|
| Forgotten Half (12 years of schooling or less) | 1990 | 46.4% | 1997 | 44.2% |
| Out-of-school youth | 1997 | 25% of full time workers make less than $16,000 (poverty level for family of 4) | Men <25 earn 1/3 less than prior generation | Women <25 earn 16.5% less than prior generation |
| # of Jailed Men under age 25 | Doubled between 1986 and 1995 | | | |
| Unmarried teen mothers 15-17 | 1950 | 23% | 1996 | 84% |
| Unmarried teen mothers 18-19 | 1950 | 9% | 1996 | 71% |

SOURCE: Modified from *The Forgotten Half Revisited*, Halperin, 1998.

The OECD (1994b) identified several systemic weaknesses across several nations that interfered with the development of adequate skills and competencies that allowed young people to be competitive in the job market.  They included:

- No vocational preparation.

- A weak educational foundation.

- Long and repeated episodes of joblessness.

- Excessive turnover.

- Employment in jobs unrelated to vocational preparation.

- Large numbers of inadequately qualified adults.

- Small firms appear to train too little.

- All firms may under-train for fear of other companies poaching their trained workers.

- Less qualified workers are far less likely to receive on-the-job training. (p. 127)

The OECD predicted that, "as the threshold of minimum requirements edges up over time, the number of adults in need of basic education, rather than occupational retraining, could reach as much as a fifth of the working-age population" (p. 127). The OECD identified the three most important problems impacting the transition to work as (a) early school leaving, (b) problems with the school-to-work transition, and (c) markets that function poorly to further education and training.

As shown in Table 2.3, which lists a variety of qualities that businesses expect in new hires, no one ideal profile of workforce qualifications has been identified through the review of literature, and no single level of educational attainment has been tied to better performance. Employer expectations do not generally include academic skills or aptitudes, nor do they include skills that are necessarily teachable. Instead, the identified traits are more about attitudes and work ethic. The central themes in the collected research seem to be the importance of employability skills and the relevancy of schooling to work. Collaborative work between education and business around the issue of workplace skills seems limited to specific school-to-work programs. If education took the lead in this discussion, the outcome could be very different.

*The Role of Education*

Pressure on education to fix the range of issues that affect young people moving into entry-level jobs is escalating. This pressure is not limited to K-12 education, although strategies tend to be focused on either K-12 or college, not on the relationship between the two or on the link between schooling and work. School is frequently blamed for not preparing students for work. Recommendations from economists, business people, and legislators are disparate in their focus; they change with the economic tide, and often come in the form of controls. Instead of working together for a united purpose, businesses expect educators to work for them and to instantaneously meet their ever-changing demands.

Economists Leontief and Duchin (1986) identified the problems of education and employment as increased dropout rate, declining daily attendance, more students performing below grade level, and declining test scores (p. 93). They suggested that education needed to be transformed to provide students with the conceptual framework and skills to function productively in a changing society. Their solution was to add computers to classrooms.

Leontief and Duchin (1986) stated that, in economic terms, educational output has no physically identifiable product. To illustrate this position from an economic point of view, the value of educational output is defined as the sum of its input costs:

- One unit of educational output = one student-year.

- Total enrollment is weighted to reflect costs of educating students at different levels. The U.S. Department of Education's estimated annual cost of educating a secondary student is 50% higher than at the primary level, so secondary education is weighted at 1.5.

- Per-student-real costs have increased for labor, and intermediate and capital inputs.

- Labor cost is the single largest input in education.

- Intermediate inputs include business services, eating and drinking places, utilities, transportation, maintenance and repair, and real estate.

- Manufactured inputs include printing and publishing, paper and allied products, miscellaneous manufactures (athletic goods, pens, pencils, art supplies, marking devices), and petroleum and plastic products (cleaning supplies, paints, motor vehicle lubricants, gas).

Leontief and Duchin (1986) proposed two scenarios to bridge the gap between high school preparation and entry-level job skills, making the assumption that the solution lay in increased computer skills. These ideas are detailed as Projections 1 and 2:

PROJECTION 1.   Placing computers in schools by 2000 - 1 terminal for every 30 students equals 1 hour per week per student on computers.

- Use the tutor mode with purchased software, no teacher training.

- Only one Computer-Based Instruction (CBI) course per 5,000 computers would be developed.

PROJECTION 2.  Courseware integrated into elementary and secondary school curricula.

- Each student receives .5 computer hours daily [Melmed (1982a), as cited in Leontief and Duchin 1986].  This would require 4 million computers plus 1 million computers for backup to meet the needs of the U.S. student population at the time.

- Costs:  $25/student for hardware ($1 billion annually) to place 10 million computers in schools by 2000.

- Ten percent of teachers receive computer training through ITV or televised instruction by 2000.

- High schools provide the basic skills required in the work place (computer literacy, word processing) and the use of electronics.

- Computer courseware is provided in math and science classes.

While Leontief and Duchin (1986) saw the need for increased computer training in schools to better prepare workers, Schor (1992) and Bix (2000) reported

on the failed promise of more jobs with the advent of technology.  In light of the

focus of the U.S. economy on profitability, pressures on businesses to stay

competitive have led to cost-cutting, which means fewer people work longer

hours.  Schor particularly emphasized the underemployed, those who work but

cannot get as much work as they need.  This segment of the population more than

doubled between 1969 and 1987. The underemployed and unemployed included

blue collar, white collar, high school-educated, and college-educated workers.  The

OECD (1994b) blamed employment problems on business for not adjusting to the

changing face of work:

> Technological and other structural changes render jobs, skills and even
> occupations obsolete at such a rate that "once-and-for-all" career
> preparation, increasingly is insufficient. The slow rate of labour force
> renewal through the entry of young, newly-qualified workers (on average
> they account for 2 to 3 percent a year of the OECD labour force) cannot
> satisfy the demand for new qualifications, thus increasing the risk of
> shortages in some skills and competences. . . . (A)s qualifications become
> outdated more quickly than workers retire from the labour force, there is
> heightened risk of older workers losing their current jobs, while lacking
> the skills and competences to move into newer jobs. (p. 145)

It is important to note the relationship of employability to

education.  Data identified by the OECD (1994a & 1994b) and Schor

(1992), among others, indicated that unemployment and underemployment

cross the bounds of education.  Workers with no formal education and

workers with advanced degrees are dealing with the challenges of finding

enough work, finding challenging work, and finding work that pays enough

to live a reasonable life.  Bix (2000) remarked that business leaders

considered job loss and hardship inevitable consequences of expanded production, factors that workers just have to deal with.  Furthermore, Bix suggested that business leaders have proposed no alternatives and no strategies to help laid-off workers find work, which is especially evident to the job seekers affected by outsourcing.

School reform is driven by business and, most often, has been focused on K-12 education, with a specific focus on academic preparation.  As educators, we are responsible for the employability of our students.  As a researcher, I raise these questions:  Should the school reform discussion be expanded to K-16?  Should an economic component be part of that conversation?  With the kind of work, the amount of work, and the qualifications for work changing so dramatically, hasn't preparing our students for work become a societal problem?

In-house training is another point of discussion among researchers including the OECD (1994b), Leontief and Duchin (1986), Picus and Bryan (1997), and Nelson et al. (2000).  Do firms and individuals invest in further training at a level that is justified by economic returns?  One belief is that employers avoid training on the theory that the investment in training leaves the company when an employee moves on to another job. The pattern for dealing with new technology in the United States has been to replace old workers with new people who already know the new technology, swapping one group of unemployed for another.  Another theory about training revolves around the relationship

between earnings and age. Earnings are lower during the training time because training is paid for at that time. Wages go up at a later date because that is when the returns are collected. Some firms train more than is justified by the returns because that training serves other objectives – collective bargaining agreements, governmentally-imposed training requirements, new equipment, or changes in company organization. In many instances, public education has been blamed for the need for in-house training. The literature has not presented strategies to resolve the disconnect between business and education, and this absence raises a number of questions: Should education be involved in discussions about the need for workplace training? How differently would educational reform look if we treated these problems of employment as societal problems and jointly pooled our efforts to find solutions?

A barrier to finding the answer to questions surrounding the role of education in the economy lies in the economic debate about the purpose of education. As the prior discussions reveal, business leaders and educators can have very disparate opinions. Businesses may avoid in-house training for economic reasons, yet they look to schools to fill those missing gaps, even though their employees are no longer in K-12 schools. Legislators debate about whether schools should focus on traditional reading, writing, and mathematics, whether schools should teach values, or whether schools should be expected to meet standards designed by committees with no educational representation. In the meantime, funding is tied up, preventing schools from staying current. Lack of

funding means old textbooks, old computers, no professional development, and no

extracurricular involvement.  Businesses assume that the quality of education is

the primary factor affecting worker performance.  This assumption has driven

many disjointed policy decisions that have way-laid the progress that is needed in

education.

<center>*Education, Policy, and Performance*</center>

Smith and Scoll (1995) presented a general discussion of educational

policy and the fast-growing income gap between college- and noncollege-educated

workers, stimulated by the changes technology had brought to the way people

worked.  The authors pointed out that the income gap had been addressed in many

ways: in President Clinton's Human Capital Agenda, in Goals 2000 legislation, in

the Improving America's Schools Act, and in the School-to-Work Act, all

legislated in 1994. Congress, however, has consistently failed to provide adequate

funding to better prepare our students.  Recently, President Bush's *No Child Left*

*Behind Act* (United States Congress, 2001) raised the stakes once again by tying

funding to specific instructional programs, assessment results, and accountability.

At the same time, this bill also reduced funding to schools.

The OECD (1994a & 1994b) presented an extensive compilation of studies

on the role of education in the technological economies of 25 member nations.

The OECD authors specifically focused on unemployment issues that had

unexpectedly arisen with the increase of technology in the workplace and the development of an "information society" in which most workers produce, handle, and distribute information. OECD researchers identified three factors that inhibited workers' access to the productivity and profit that technology was supposed to deliver: (a) the inability of businesses and institutions to adapt quickly to new technology, (b) trial and error approaches to learning new technology, and (c) a steep learning curve.

Much of the OECD (1994a & 1994b) data are concerned with employment and production statistics in industrial and semi-industrial economies. The data were packaged in varying charts and tables to illustrate employment trends, longitudinal patterns, and input/output comparisons across nations. Unexpectedly, these investigations revealed that few comprehensive data existed on the extent and intensity of the use of information technology. As an example, U.S. findings showed significant unemployment due to the slow change in orientation of education, training, and guidance to adapt to technology in the workplace. While the authors of the OECD study promoted the development of a lifelong learning process as an answer to this complex problem, they failed to provide a clear definition of lifelong learning. Up to this point, economic analysts have used educational attainment to evaluate workers because it is fairly consistent, correlates with occupation and earnings, and can predict further participation in education and training. A college degree, however, does not necessarily identify a lifelong learner.

The OECD (1994a & 1994b) reports included many studies that examined the relationship between education and the economy.  Findings showed that people with less education generally had markedly lower earnings and higher unemployment.  Consistently, the mean earnings differences across countries increased between the more-and the less-educationally qualified (see Table 2.2).  After examining multiple studies, the OECD concluded that education enhanced productivity by providing knowledge and skills that apply to work, improving communication and management skills, and enabling workers to learn new tasks and information.  No link, however, is provided to connect this productivity theory with lifelong learning.

Most recent school reform movements have focused on academic performance.  Federal, state, and private groups agree that "higher standards in schools will help keep America competitive in foreign markets" (Spring, 1984, p.46).  Spring sited business concerns over changing demographics as behind the push for standards in schools.  Unemployment in the 1970s stimulated an increased focus on career preparation as the number of available workers decreased.  Nelson et al. (2000) supported the contention that good schools are good businesses, and that investment in schools can only help business.  Goals 2000 legislation (Nelson et al.; Smith & Scoll, 1995) that supported President Clinton's K-12 education agenda considered the business community an essential participant in school reform.

The concept of lifelong education is growing in popularity among economic analysts of education, but lifelong learning presents yet another set of skills that extend beyond academic preparation. The varied lists of desired skills and traits that businesses feel entry-level workers should have (see Table 2.3) are not academic, nor are they easily transferable to school.  The Search Institute (2004) has researched adolescent development for a number of years. The outcome of the Institute's research is the developmental assets framework, a list of factors that are said to determine the success of children in their adult lives.  Many of the issues identified by the Search Institute are traits that businesses seek in entry-level workers.  Between 1990 and 1995, the Search Institute surveyed more than 350,000 students in grades 6 through 12 to "learn about the developmental assets they experienced, the risks they took, the deficits they had to overcome, and the ways they thrived" (p. 1).  In 1996, a second, more socio-economically diverse dataset was collected, and the developmental assets framework was revised to its current configuration of 40 developmental assets.  The work of the Search Institute has shown that having more assets increases a child's chances of having positive attitudes and behaviors.  These attitudes and behaviors are transferable to the workplace in the form of leadership abilities, communication skills, using positive strategies when working with others and accomplishing tasks, understanding and respecting boundaries, managing time, and being engaged with the task at hand. As a researcher, I continue to ask questions about how asset building in schools could work:  Should asset building be added to a curriculum that is already

stretched to its limit to meet the demands of high-stakes testing and accountability?  How do developmental assets fit into the general definition and application of literacy in schools?

Researchers are in agreement that literacy (reading, writing, and math) is no longer just a nice thing to have. Soltow and Stevens (as cited in Nelson et al., 2000) supported this notion in their examination of literacy in the United States: "To be literate, as we have seen, did not simply mean to be competent at a specific level of reading mastery.  It meant, perhaps more importantly for the employer, exposure to a set of values compatible with a disciplined workforce" (Nelson et al., p. 319).

In attempting to develop a composite of a lifelong learner that possesses many of the traits or assets businesses desire, Greany (2003) has looked for a set of attitudes, skills, and types of knowledge that could enhance learning.  Adding to the complexity of this task is the idea that "good skills require good learners, and good learners are not necessarily motivated by the need to meet a target or a statutory requirement" (p. 19).  Greany speculated that this may be one reason that employers are relying more and more on independent self-managed learning as a job skill, trusting the fact that an estimated 90% of our learning at work is informal.  Greany concluded that lifelong learners:

- think about their learning and manage it carefully,
- know how to motivate themselves,
- know how to overcome barriers to learning,

- identify with role models and mentors, and

- take advantage of various learning media and technology. (p. 19)

Greany has suggested that these dispositions for lifelong learning have remained implicit for too long and should become a specific part of the curricular composition of schools. He cited *Learning to Learn in Schools*, a two-year project supported by the Campaign for Learning that examined what happened if you taught students to learn. *Learning to Learn in Schools* operated in 25 schools using the following principles:

- Readiness – knowing how to manage your learning and motivate yourself.

- Resilience – knowing how to keep going in a changing world.

- Resourcefulness – having a range of strategies for effective learning and communicating well with others.

- Remembering – applying learning and maximizing your memory.

- Reflectiveness – looking back, improving, remembering. (p. 19)

Education has reacted to pressure from business for over a century. The focus has shifted from academics to vocational training to the sciences, and now to lifelong learning. A glaring problem is that education has never been the driving force in any of these movements. How can we build a productive relationship with business? What will it take for educators to initiate instead of follow along, to lead instead of be led?

*Comprehensive School Reform:  An Overview*

The focus of comprehensive school reform (CSR) is to improve the learning of all students by examining and adjusting all aspects of a school, from instruction to school structure (Martinez & Harvey, 2004).  Martinez and Harvey have identified that a shift in thinking in the early 1980s began to support the notion that individual schools should be the unit of change for education reform. This thinking was reflected in a number of ways, including Title I school-wide reform programs, the effective schools movement, and in specific reform designs such as the Coalition of Essential Schools and the School Development Program. The authors recognized that formal approaches to school reform began to appear in the 1990s as model developers tapped into funding from grants, competitions, contracts, and sponsors.  The New American School, for example, was the catalyst for combining private funding with corporate design structure to redefine how schools should look.  Some of the resulting reform models include Atlas, Modern Red School House, and Success for All.

Martinez and Harvey (2004) have noted that, in 1998, the United States Congress established the Comprehensive School Reform Demonstration (CSRD) program.  This legislation defined curriculum, instructional practice, professional development, community engagement, and technology as key components of the whole school reform process, and recommended several specific reform models to schools and school districts.   In 2002, according to Martinez and Harvey, the *No Child Left Behind Act* (NCLB) expanded the CSRD program by doubling the

funding to $310 million, removing the "demonstration" label, and incorporating

CSR into Title I, the major federal aid program to elementary and secondary

education. The NCLB legislation added two components to the original nine

elements of CSRD to ensure the use of practices grounded in scientifically based

research. Martinez and Harvey have provided the following summary of the

CSRD elements:

Comprehensive School Reform Demonstration (CSRD)

- Measurable goals and benchmarks.

- Support from staff members.

- Research-based methods that have been proven in schools with

  diverse characteristics.

- External assistance from a comprehensive school reform entity.

- Meaningful parent and community involvement.

- Continuous and high-quality staff development.

- Specified coordination of resources to support and sustain

  school reform efforts.

- Evaluation of the implementation and impact of reform on

  students' academic achievements.

- Comprehensive design that includes instruction, assessment,

  classroom management, professional development, parental

  involvement, school management, and alignment of curriculum,

  technology, and professional development.

Two additional components added in 2002 by NCLB legislation:

- Strategies that show evidence of significantly improved

   academic achievement of students.

- Support for teachers, administrators, and other staff.  (p. 8)


Martinez and Harvey (2004) have recognized that CSR has brought support

directly to schools by triggering investments of over $1 billion in the development

of new schools, which has impacted approximately 2 million students.  Student

achievement has improved, as reflected in a 2002 meta-analysis of 232 CSR

evaluations conducted by Geoffrey Borman:  "The average student from a CSR

school outperformed about 55% of [non-CSR] children" (as cited in Martinez &

Harvey, p.9).  Martinez and Harvey noted that entrepreneurial enterprises that

focused on school reform developed rapidly as a   result of the federal support for

this movement.

Martinez and Harvey (2004) have summarized a number of lessons learned

in their examination of the CSR movement.  One critical component of successful

reform is the capacity of the reform model and its team to adapt to the local

context by learning to relate to the school in which the reform model is being

implemented.  Model developers and other change agents have learned that the

many complex activities that comprise a school must continue at the same time

that changes occur, and the reform model must allow for that flexibility.  Another

key component to CSR success is teamwork.  Teamwork is the distinction between

adoption and adaptation of a school reform model.  Schools and teachers have learned over many years to adapt to the changing face of education.  Many teachers have the attitude that this, too, shall pass.  Adoption, on the other hand, reflects a level of buy-in by staff and administration that is essential for long-term changes in practice.  Martinez and Harvey have recognized the need for CSR developers to design models that wrap around schools' existing structures and programs and address team building in ways that encourage teachers to work together to embrace reform.

Since the publication of *A Nation At* Risk in 1983, the dominant strategy for school reform has been systemic change in standards, assessments, accountability, and governance (Slavin, 2001). CSR and the systemic reform movement share the goal of improved student achievement.  Slavin believes that the difference between the two approaches is that comprehensive school reform models begin at the school level and increase the effectiveness of schools, one school at a time, until large numbers of schools are using instructional methods that are in line with state and national standards. Curriculum-based reform models introduce school-wide change that is implemented through the use of specific curriculum materials and teacher training.  According to Slavin, on the basis of state assessment scores, some of these models have shown substantial evidence that student achievement has improved.

*Standards-Based Accountability*

A steady shift toward accountability has defined the efforts of state educational policymakers over the past 10 years. According to Coffey and Lashway (2002), accountability is generally based on specific performance standards, systematic testing, and consequences for results. The authors have noted that the reauthorization of the *No Child Left Behind Act* accepted existing state standards and assessments, as well as added the requirement that states define adequate yearly progress (AYP) toward meeting the standards. The goal of adding the AYP caveat is to make all children proficient within 12 years. Failure to make AYP for two or more years would result in escalating consequences that could include public school choice, use of private vendors to assist children, and the systemic reconstitution of schools (p. 2).

Coffey and Lashway (2002) have recognized that the emphasis on outcomes (results) is a major shift in thinking from initial reform processes, which focused on inputs (effort). The authors note that polls have shown that primary support for AYP has come from business and government. Additionally, polls by *Public Agenda* and *Phi Delta Kappan/Gallup* have found public school parents strongly supporting standards as measures of success. Eighty-seven percent of teachers surveyed in *Education Week's* January 2001 national survey stated that raising standards is "very much" or "somewhat" the right direction to move (Gandal & Vranek, 2001, in Coffey & Lashway, 2002, p.3).

Some critics point out that the standards themselves vary in quality and rigor.  Others argue that major policy decisions should not be made on test scores, citing the validity, fairness, and effectiveness of the wide variety of state assessments in use.  A common concern is that standards will narrow instruction, placing teachers in the position of teaching to the test, and leaving out important content that is not tested. The long-term worry is that states will not be able to stay the course.

Coffey and Lashway (2002) have examined both sides of these arguments and have developed steps for states and school leaders to take to ensure the success of school reform:

STEPS FOR STATES

- Create standards that are clear and precise to improve chances of implementation.

- Avoid the glut of standards that include everything a student can learn about a subject.

- Make sure that tests are aligned with standards.

- Pay as much attention to support as to challenge.

STEPS FOR SCHOOL LEADERS

- Be the champion of standards.

- Focus on developing capacity.

- Help teachers connect to standards with the goals and commitments they already have.

- Use data to focus reform.

- Enlist district-level support. (pp. 4-6)


Coffey and Lashway (2002) have encouraged educators to consider a number of factors when weighing the adoption of a whole-school reform model. These factors focus on commitment and involvement. Primarily, staff support is critical to the success of school-wide change. For this reason, it is essential that the entire school community understand that their commitment is for the long-term. The scope and length of commitment are two reasons that schools are encouraged to shop around and find a program that is a good match for the school. Cost is another major factor. First-year implementation costs can be hundreds of thousands of dollars and can vary widely from program to program. Federal funding is available, but schools are generally expected to pay for professional development and technology. Upfront research and planning in each of these areas will help ensure the success of school-wide reform.

Coffey and Lashway (2002) have strongly encouraged schools to develop a climate of shared decision-making based on the assumption that staff involvement in making decisions will increase a school's capacity to learn and grow as it moves through the reform process. The authors identify seven key factors that increase the success of shared decision-making as a tool to improve school performance:

1. Leadership that facilitates involvement and sets high expectations.

2. A professional community.

3. A focus on instruction and curriculum to improve performance.

4. Training to increase the knowledge and skills of teachers.

5. Sharing information and data on the status of the school.

6. Collaborative decision-making around organizational practices and directions.

7. A system of rewards that recognize contributions and growth.

    (pp. 9-10)

With these factors in place, Coffey and Lashway believe that the success rate for school reform through a collaborative team effort is substantially improved.


*Policy Implications*

Martinez and Harvey (2004) have reported that Comprehensive School Reform (CSR) impacts educational policy in three key ways: data, school context, and leadership. CSR relies on data as a measure of improved student performance and closing the achievement gap. State policy can lead the way in helping "districts and schools review test results, understand item-by-item analysis, focus on the distribution of results rather than averages, and develop data profiles that can serve as action guides" (p. 14). The authors state that within the school context, policy recommendations have included provisions that allow districts to exchange greater school autonomy for increased accountability. According to Martinez and Harvey, state policies have been organized around outcomes such as graduation rates and improved achievement, and have included more finite

measures such as enrollment and per-pupil allocation. Each of these outcomes is defined by data. Another element of effective CSR is strengthening teaching and school leadership. Martinez and Harvey have suggested that educational policy could include incentives to attract and retain high quality professionals, provide routine professional development and support for teachers once they are in the field, and develop systems that match high quality teachers with students who are the most academically needy.

Ultimately, educators are preparing students to be successful adults. The workplace projection is that expectations will change for workers over the course of their earning years. Lewis (2004) has noted that, in the future, workers could change jobs as many as 15 times. Whether or not students attend college, continuous learning will be a necessary skill to ensure success after high school. Whole-system reform that extends through federal, state, and district levels can concentrate educational policy on continuous school improvement. Martinez and Harvey (2004) agree that the results of such a unified effort would increase the skills of teachers and students, create professional learning communities, support the integration of coherent academic programs, add flexibility to the uses of available resources, and support excellent leadership at all levels.

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*From Policy to Practice*

Visher, Bhandari, and Medrich (2004) have maintained that many high school students are not sufficiently engaged in academic study. These students do not recognize their own potential, do not know what work is like, and do not know how to prepare themselves for the future. Visher and her colleagues stated that the School-to-Work Opportunities Act of 1994 was designed around the idea that all students could benefit from more knowledge about career opportunities, including the skills and training required of different jobs. The authors examined the influence of career exploration programs on high school graduation and postsecondary enrollment.

Seven avenues of preparation were examined by Visher et al. (2004): career majors, cooperative education, internship/apprenticeship programs, job shadowing, mentoring, school-based enterprise, and technical preparatory programs. Their study distinguished between students in career exploration programs and students in tech-prep, job-shadow, cooperative-education, and mentoring programs. Data gathered from schools and students in 1997 and 2000 were compared. The researchers discovered that participation in career exploration programs expanded from 38% to 53% in three years. Students attending vocational schools participated more in career exploration than did students in comprehensive high schools. Minority status and academic achievement were not linked to participation. The data showed that students in

career exploration programs were most likely to graduate from high school, participate in Advanced Placement courses, and attend college. Students in internship and mentoring programs had the lowest dropout rates. The results of this study supported the addition of career exploration programs to comprehensive high schools as a method of supporting students who might not have seen college in their futures.

States across the country have approached the implementation of school reform in very different ways. In 2002, the Oregon Department of Education published a set of curriculum goals and standards titled Career Related Learning Standards (CRLS). The CRLS encompasses personal management, problem solving, teamwork, communication, employment foundations, and career development. Three components frame this approach to career and life roles in education: (1) common curriculum goals that encompass the PK-12 program of study, (2) grade-level indicators that identify age-appropriate learning needed to connect the common curriculum goals and the CRLS, and (3) specific standards that define knowledge and skills necessary to succeed after high school.

Bettis (2004) investigated efforts by the state of Illinois to implement school improvement at the local level. Illinois implemented school reform in stages that grew from learning goals to performance standards over a 15-year period. Goals for learning were established in six subjects in 1985. The Illinois learning goals were tied to specific benchmarks that added a defining measure to what students were expected to know and be able to do in the content areas.

By 2000, the state had established performance standards that indicated what

students should know and be able to do at five different junctures in their

schooling.  Bettis identified the final component of Illinois school reform as the

assessment framework that clearly defined what elements of the learning standards

were suitable for testing in math, reading, writing, science, and social studies.

The American Federation of Teachers (1999), known as the AFT, has

presented a collection of ideas for improving student performance in low-

performing high schools to ensure that teachers have a voice in the school reform

process.  The AFT has suggested that schools begin with a reform committee

composed of representatives from all constituent groups.  The reform committee

would be charged with several tasks:

- Conduct an internal audit to identify the school's most pressing

  needs.  Include curriculum, assessment, school management, school

  leadership, professional qualifications and professional

  development of staff, parent and community involvement, school

  discipline, safety and security, instructional materials, the physical

  plant, and district support for schools.

- Systematically consider research-based reform programs that are

  comprehensive, and target specific areas of difficulty.

- Establish entry-level standards for what first-year students need to

  know and be able to do, especially in reading.  Consider 'gateway'

exams in reading and math, or entry-level screening and diagnostic tools.

- Establish an intensive intervention system for students who are struggling to meet standards: a reading academy, an intensive research-based intervention program, or increased instructional time.

- Establish a safe and orderly learning environment.

- Establish high academic standards, and provide all students with challenging coursework and the support they need to reach standards. Develop transition courses to help bridge the gap. Arrange common planning time for teachers to coordinate curriculum and support for students.

- Work to ensure that teachers are fully certified in the subjects they teach.

- Organize schools into personal communities.

- Create incentives for students to study and achieve so that students know that effort and achievement count. (pp. 3-8)

The AFT (1999) has identified a number of promising high school reform programs based on established criteria: high standards for all students, effectiveness in raising academic achievement of low-performing schools, replicability, and support structures that include professional development,

material, and ongoing implementation support.  The academic programs identified

were:

- High Schools That Work – combines traditional college preparatory

  work with vocational studies.

- Expeditionary Learning Outward Bound – central precept is that

  students learn better by doing. They develop character, high

  expectations, and a sense of community.

- Community for Learning – promotes independent learning habits.

- Junior Great Books – develops skills, habits, and attitudes of successful

  readers.

- Exemplary Center for Reading Instruction (ECRI) – improves students'

  ability to read, understand, and communicate in English.

*Sustaining Change*

Choosing the right reform package and implementing changes successfully

are heavy tasks in themselves.  Sustaining successful change is even more

challenging.  Coffey and Lashway (2002) identified the following suggestions

from research on school   reform to keep schools on track:

- Create a communication system to keep everyone informed: frequent

  stakeholder meetings, ongoing oral and written updates, parent and

  community meetings.

- Reduce staff turnover by improving working conditions, respecting

  teacher autonomy, and offering incentives.

- Involve civic and business leaders in schools.

- Provide staff development to build teacher capacity.

- Align the system so that standards, assessments, teaching practices, and professional developments are focused on the same goals.

- Consider using change facilitators to provide support, technical assistance, and clarity. (pp. 10-11)

The U.S. Department of Education (USDE) (2005) has stated that the overarching assumption behind creating a performance-based public education system is that student achievement will rise if schools are held accountable for student performance. The USDE has identified five elements that provide the structure needed to create a supportive transformational environment:

- Build leadership, trust, and ownership.

- Mobilize district resources to support school change.

- Use data to assess school performance, select appropriate improvement strategies, set high goals, strategically plan for improvement, and measure progress.

- Develop partnerships that promote parent and community involvement.

- Create high-performance incentives for schools. (p. 1)

The position of the USDE (2005) is that the task of creating a common mission that focuses on instruction rests on the skills and facilitation of the

principal.  Critical Friends Groups, developed by the Annenberg Institute for School Reform, assist principals to develop a collaborative culture in their schools. The USDE expects that districts can help schools create strong and capable teams by recruiting teachers who are enthusiastic about change, and districts can promote buy-in by requiring that a percentage of teachers support a program before the program is implemented.  Another strategy is to create smaller schools that more easily support collaboration and communication among staff, and create an environment where adults can build relationships with students.

Examining and reallocating district resources are critical pieces in supporting successful school reform (USDE, 2005).  Some tough decisions may be required to align the budget with the district's instructional goals.  These tough decisions can include streamlining the central office, reassigning teachers and aides, and redistributing federal, state, and local resources to best support learning. The USDE supports the practice that allocation of funds should be driven by performance data.  Test scores, comparisons of school-wide and grade-level performance, and surveys of students, teachers, and parents can influence the decision-making process.  According to the USDE, matching strategies to schools is effective if this type of analysis is conducted to develop a detailed understanding of the needs of particular student populations (p. 6).

A common thread throughout the work reviewed for this study is that turning around low-performing schools requires the involvement of all constituents.  Parent and community involvement creates a supportive

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environment in which children learn more and schools improve. Creative and collaborative thinking can draw resources from businesses, colleges and universities, and teachers unions. When the goal of school leadership is to work in partnership with all constituents, the message to the community is that education requires a shared commitment.

The U.S. Department of Education (2005) has encouraged districts to use incentives to stimulate change. Cash awards could be given to teachers in schools where goals are met. In Boston, extra money has been given to schools that show the greatest increases in performance. School choice and open enrollment allow parents to choose their child's school, and are intended to motivate schools to improve performance. The school choice policy in Portland, Oregon, allows parents to apply to as many as three schools outside their neighborhood, and a lottery determines the final enrollment decision. The *No Child Left Behind Act* (United States Congress, 2001) has supported the creation of charter schools. Charter schools were intended to provide parents with more educational options for their children, and are established through a contract process with local school boards. Charter schools can access federal dollars that are tied to student enrollment, yet are exempt from a number of state and local regulations.

*Perspectives on School Reform*

A number of models for school reform have been developed over the years. Educators and model developers from CSRD schools met in May 2000 to discuss

the challenges in adopting and implementing comprehensive school reform

(Asensio & Johnson, 2001). Asensio and Johnson reported that 80 staff members

representing almost 30 CSRD models participated with staff from the U.S.

Department of Education CSRD office, the California Department of Education,

and the National Clearinghouse for Comprehensive School Reform (p. 2). The

authors summarized a number of central issues that were identified as critical to

the success of meaningful educational improvement.

Asensio and Johnson (2001) have identified time, defined in many ways, as

critical to successful school reform. The authors note that time is required to

assess and understand the needs of schools, and to thoughtfully choose the right

school reform model. During implementation, teachers need common planning

time to prepare and collaborate with their colleagues, allowing teachers to stay

focused on the components of student improvement: creating common language,

having meaningful professional development, collecting data, and assessing

progress. Since the goal of school reform, as described by Asensio and Johnson,

must be to sustain real learning over the long term, time is essential for correct

implementation of change and for the evaluation and follow up that is necessary

for success.

CSR model developers at the May 2000 conference worked to convince

states to develop policies that would encourage change (Asensio & Johnson,

2001). Although financial commitments demonstrated that states supported school

reform, the discussion at the meeting settled around whether or not the need

existed to employ someone to focus on state-level school reform. A person in this position, for example, could organize a fair that displays reform models and provides a venue for districts and schools to discuss options that would best fit their needs. Developers also wanted states to be more flexible around curriculum adoptions, allowing schools to choose research-based materials to support their reform efforts.

CSR model representatives identified a need for districts to play a bigger role in assisting schools with choosing appropriate reform models and helping with the contracting process (Asensio & Johnson, 2001). Model developers proposed that schools needed district support to assess data and to help schools make data-driven informed decisions. Discussants suggested that districts should not tolerate staff members who were not meeting expectations around implementing change, especially at the leadership level. Ultimately, schools needed district support to sustain change after the CSRD and CSR grants ended.

Asensio and Johnson (2001) stated that those present at the May 2000 Conference agreed that informed, up-front decision making by all parties was a critical ingredient to successful school reform. The reasons schools and districts make the decisions they make about reform models range from philosophy to money to technology, to the materials the model can provide. Low-performing schools often do not know what they need to improve, or they would be already doing it (p. 7). Asensio and Johnson supported the need for outside assistance as schools commit to comprehensive school reform.

Asensio and Johnson (2001) identified a school's readiness and willingness to commit as another major concern that surfaced during the May 2000 Conference sessions. The model developers proposed that many low-performing schools needed to do prerequisite work prior to implementing a reform model. Preliminary work and long-term commitment go beyond buy-in. The developers claimed that successful implementation of a school reform model would happen when the staff had established ownership of the program to the degree that they expressed the need for the reform and took the responsibility to make the program work.

A reform leader is both a learner and a catalyst for the change process. Asensio and Johnson (2001) have recognized that a school leader needs support, as well, in the form of principal support networks, leadership training, and development of technology skills: "The challenge is to create a culture that recognizes teaching as a learning profession" (p. 9). Creating a true culture of learning is challenging for building leaders. Strong, stable, visionary, and committed leadership at the building level is the essential ingredient to building a collaborative and committed school community (Asensio & Johnson, 2001).

Effective evaluation of school reform needs to be based on the components of the reform model that extend and sustain student learning. Asensio and Johnson (2001) have identified two key components that result in a successful evaluation. The first component is that the tested curriculum needs to match the taught curriculum. The second component is that schools need to be strategic about what

they teach.  Reform programs have a beginning and an end.  Over time, the model should evolve from an external program to a structure or support that is embedded in the life of the school.  If the reforms become a part of the culture of the school, then the reforms are sustainable.

*Bridging the Gap for Entry-Level Workers*

Little has changed since the 1945 White House conference on vocational education, which stated that 20% of high school students were well prepared to enter college, 20% were receiving solid vocational training, and 60% were not receiving the life adjustment training they needed (Kliebard, 2002, p.57).  In 1988, the Commission on Work, Family, and Citizenship, published a longitudinal study of "the forgotten half," noncollege-bound youth (Adelman, 1993; Wenrich, 1996).  Of the three million high school graduates in 1972, 40% did not continue formal education, nor did they receive training in the military.  Another 15% earned less than a semester's worth of credits beyond high school by the time they were 30.  These statistics are borne out in an analysis conducted by Portland Public Schools (2007) using data provided by the National Student Clearinghouse.  The National Student Clearinghouse reports enrollment for 91% of the total U.S. enrollment of students in higher education.  Portland Public Schools (PPS) students who entered 4-year and 2-year colleges in the year following their graduation from PPS high schools were tracked over a 7-year period to estimate retention and graduation rates.  Findings are listed in Table 2.5.

Table 2.5.  PPS Students Entering 2-Year and 4-Year Colleges in the Year
Following High School Graduation

| Graduation Year | High School Graduates | % Entering 2-Year College in the Year Following HS Graduation | | Earned Associate's Degrees Earned | | % Entering 4-Year College in the Year Following HS Graduation | | Total # of Bachelor's Degrees Earned (Includes students not in database in year following graduation) | |
|---|---|---|---|---|---|---|---|---|---|
| | N | N | % | N | % | N | % | N | % |
| 1999-2000 | 2,698 | 598 | 22.2% | 100 | 16.7% | 907 | 33.6% | 681 | 66.8% |
| 2000-2001 | 2,802 | 725 | 25.9% | 82 | 11.3% | 1,006 | 35.9% | 644 | 57.9% |
| 2001-2002 | 2,854 | 679 | 23.8% | 60 | 8.8% | 1,048 | 36.7% | 515 | 43.7% |
| 2002-2003 | 2,779 | 703 | 25.3% | 53 | 7.5% | 1,056 | 38.0% | 86 | 7.6% |
| 2003-2004 | 2,623 | 626 | 23.9% | 12 | 1.9% | 1,097 | 41.8% | 1 | .01% |
| 2004-2005 | 2,547 | 601 | 23.6% | 1 | 0.2% | 984 | 38.6% | | |
| 2005-2006 | 2,678 | 625 | 23.3% | 2 | 0.3% | 1,056 | 39.4% | | |

 SOURCE: Portland Public Schools, 2007.

        To summarize Table 2.5, PPS data reveal that 38% of the 18,981 students

graduating from PPS high schools in the seven years that span school years 1999-

2000 and 2005-2006 did not continue formal education.  (See Appendix A for the

full PPS report.)  Table 2.5 shows a significant drop in the numbers of students

starting college after high school compared with the numbers of students

completing degrees.  (Note that the numbers of students completing Bachelor's

Degrees includes students who may not have entered college directly after high

school, but enrolled at some later date and completed college in the designated

year.) If the 38% entering the workforce is adjusted for the differences between the

numbers of students who start and complete college, a comparison with the

research of Adelman and Wenrich suggests that the pattern of youth entering the

workforce has not changed since the 1960s. A critical question arises: Have schools expanded their focus to support the majority of students who enter the workforce directly after high school?

Much of the literature presented in this chapter reflects the influence of business on education, and the complaints of business about education. The lag of the United States behind other countries in global trade is repeatedly blamed on the failure of public schools (Kliebard, 2002; Nassaw, 1979; Spring, 1984). School reform, most recently reflected in President Bush's *No Child Left Behind Act* (United States Congress, 2001), is promoted as the solution to the problem of international trade. Yet, to paraphrase Spring (1984), who determines what knowledge is of most worth?

We currently evaluate students on how well they did in school, not on how well they do after they leave school (Kerchner, 1997). A large pool of information is missing from workers who have basic education and are directly affected by underemployment and outsourcing. Data about high school graduates and what they are finding in the workplace could provide talking points to strengthen the relationship between business and education. If this conversation does not happen, a very large segment of the population will continue to lose its buying power and will tip the economy toward an increasingly bigger rift between the "haves" and "have-nots."

We are at a critical juncture in the workplace. There appears to be no proactive, forward-moving relationship between business and education. Isn't it

time for education to strengthen its presence and its influence in these discussions?

We need to abandon our patchwork responses to business pressure and stand up

for kids.  We need to fill in the data gap by talking with young people who have

managed to achieve success at work without attending college.  Sixty percent of

the student population enters the workforce instead of going to college.  Educators

should hear their voice and be their voice.

*Critical Theory*

The investigation in this chapter consists of research from the fields of

education, business, and economics that examine varying aspects of workforce

preparation, a topic of interest to each community.  A pattern uncovered in this

review is that business leaders, economists, and educators are generally working in

isolation to solve a problem that they all share.  A critical missing component is

the voice of students and workers.  Samples of student and worker voices were

examined to provide fresh insight about skills that transfer from high school to the

workplace, and about improvements schools could make to support students who

go directly to work after high school.  The outcomes of this study critically

challenge existing educational tenants.  Giroux (2004) has stated that, "if educators

are to counter global capitalism's increased power to both depoliticize and

disempower, it is crucial to develop educational approaches that reject a collapse

of the distinction between market liberties and civil liberties" (p. 2).  A consistent

theme in Giroux's literature suggests that educators develop persuasive forms of critical pedagogy that can transform society and challenge the dominance of business and political attitudes over education.  An examination of critical theory lays the groundwork for effectively presenting the results of this research.

*Origins of Critical Theory*

Carr and Kemmis (1986) have stated that critical theory developed from a conflict with traditional research practices.  In the early 20th Century, proponents of critical theory were concerned that Positivist quantitative scientific research practices were replacing reason with technique.  The outcome, as identified by Carr and Kemmis, was that the critical analysis of society was becoming driven by a specific set of scientific rules.  Those rules were more frequently seen as limitations by many researchers, particularly those moving into qualitative research practices.

The argument between quantitative and qualitative researchers continues today, as seen in the National Research Council (NRC) report of 2002, a report created by the Committee on Scientific Principles for Education Research. Although the report, as presented by Adams St. Pierre (2002), claimed that the committee served to temper those members of the federal government who wanted to end "fads" in educational research, the publication actually challenged the validity of research that was not scientifically- or evidence-based (p. 25).

"Extreme" epistemological perspectives referenced in the article advocated that

"all knowledge is based on sociological determinants like power, influence, and

economic factors" (p. 25). Feminist theories, critical theories, postcolonial

theories, race theories, and poststructural theories were included in the list of

research practices that were considered extreme. The report recommended a

central clearing house for educational research that would analyze new studies and

data using a common conceptual framework. Adams St. Pierre argued that critical

theorists saw the restrictions proposed by the NRC report as another attempt to

discipline and control science. She challenged the NRC claim that a single

positivist epistemology should govern all research, referencing many critical

theorists (Rajchman, Butler, Foucault, Lather) in her rebuttal of the NRC report.

Critical theory, as defined by Gall, Gall, and Borg (1999), represents a

broad school of thought that examines the nature of power relationships and works

toward emancipating the members of a group or culture from the many forms of

oppression that operate within that culture (p. 361). The authors site seven basic

assumptions identified by Kincheloe and McLaren that are accepted by critical

theorists:

1. Certain groups in any society are privileged over others.

2. Oppression has many faces.

3. Language is central to the formation of subjectivity (conscious and
   unconscious awareness).

4. The relationship between concept and object, and between signifier and signified, is never stable or fixed, and is often mediated by the social relations of capitalist production and consumption.

5. All thought is fundamentally mediated by power relations that are socially and historically constituted.

6. Facts can never be isolated from the domain of values or removed from some form of ideological inscription.

7. Mainstream research practices are unwittingly implicated in the reproduction of systems of class, race, and gender oppression.

(pp. 361-365)

Gall, Gall, and Borg (1999) have identified a number of ways that critical theory has made an impact on education. Critical theorists have concentrated their efforts on school failure among specific cultural groups, and on the differing educational experiences of privileged and nonprivileged students. The authors note that many researchers have looked at the hidden curriculum in schools that shapes the attitudes and habits of students, and critical theorists question the role of institutions in silencing the voices of underrepresented groups.

A number of influential scholars have developed critical theory into a valid research practice over many years and through much controversy. The Frankfurt School, established by a group of researchers after World War I, promoted the idea that no single research methodology could completely define an investigation (Held, 1980). The work of critical theorists Max Horkheimer, Theodor Adorno,

Herbert Marcuse, and Jurgen Habermas applied both quantitative and qualitative research methods to demonstrate this premise.

*The Frankfurt School*

The founders of the Institute of Social Research, better known as the Frankfurt School, were drawn together in Germany prior to World War II in the hope of establishing a critical social consciousness that was able to penetrate existing ideology, sustain independent judgment, and be capable of maintaining the freedom to think that things might be different (Held, 1980). Held described several theoretical innovations that emerged from the Frankfurt School: the analyses of the structure of reason and technique, and the recognition of the entanglement of enlightenment, myth, domination, and nature, specifically authoritarianism and authoritarian personality. The most active years of the Institute were 1930-1944, which paralleled the growth of Nazism and Fascism. Held noted that the Frankfurt School moved in 1935 to Columbia University in New York as a result of the political unrest in Europe. This move allowed the Frankfurt School to pursue sociological research and draw many notable sociologists into its ranks.

*Horkheimer: Three Elements of Critical Theory*. Under the leadership of Max Horkheimer, according to Held (1980), the Institute was focused on the development of interdisciplinary social theory, combining philosophical reflection with the rigorous investigative procedures of individual sciences (p. 175).

Held acknowledged that Horkeimer identified three elements of critical theory that

clarified the Frankfurt School's early approaches to critical research:

1.  A critique of ideology.

    Ideologies emerge from social relationships. Ideologies are often defined
    by the collection of symbols, ideas, images, and theories through which
    people experience their relationships to each other and to the world.
    Critical theory aims to assess the divide between societal representations
    and reality.  Immanent criticism examines the relationship between history
    and concept in order to transcend those differences.  The principal of
    negation, defined as contradictions that cancel each other out, is the
    mainstay of this approach. (p. 185)

2.  The importance of methodical research in an interdisciplinary context.

    Critical theory must ensure a level of validity that is congruent with the
    most advanced traditional theories.  Logical consistency, methodological
    clarity, reproducibility, and the capacity to explain problems and issues that
    other theories and modes of procedure cannot account for, are to be
    respected.  These components must include systematic reflection
    employing philosophical, theoretical, and interdisciplinary perspectives on
    the nature of the phenomena under scrutiny. (p. 188)

3.  Emphasis on the central role of praxis in the ultimate verification of
    theories.

    Theory is intertwined with history.  If a theory is correct, this will be
    indicated in history.  Praxis is an historical, political, and epistemological
    category.  While all thought and theory are tied to human interests, critical
    theory expresses and is guided by a particular practical interest.  The
    doctrine of individualism allows the individual to pursue his own interests
    and, at the same time, automatically serve the common interests of the
    whole. (pp.  191-193)

These elements of critical theory, critique, methodical research, praxis, and verification are given further definition through contributions of Adorno and Marcuse.

*Adorno: Negative Dialectics. Negative Dialectics*, published in 1966, is considered by Held (1980) to be Adorno's most developed position statement. Adorno argued that the interdependence of the subject and object could not be ignored, and that interdependence defined the cognitive process. Adorno's course (as cited in Held, p.214) of analysis encapsulated his philosophies and practice:

1. Identity thinking – all objects fall under defining general concepts.

2. Rational identity – an object only does justice to its concept if it meets the specifications of its ideal characteristics.

3. Negative dialectics, non-identity thinking – employs language, through the grouping of concepts, as a connotative or indicative device that reveals new perspectives.

Held (1980) explained that Adorno's argument was that critical theory sought to understand, analyze, and enact the subjective ground of society. Much of Adorno's work was couched in techniques that involved language: references and cross-references, choice of verb tenses, hyperbole, and repetition of some themes and the glaring omission of other themes. Held noted that a key component of Adorno's work is referred to as constellations. Constellations are sets of concepts or clusters of juxtaposed words and terms that assist in the

reconstruction or the representation of ideas (p. 207). This analytical process is visible in the systematic analysis used in grounded theory.

*Marcuse: The Stages of Development of Critical Theory.* Held (1980) reported that Marcuse defined critical theory as a phenomenon that recognized that unrealized potentials were created by a gulf between prevailing human existence and human essence. The gulf represents social conditions and concepts that exist "in opposition to the established order" (p. 225). Marcuse is credited by Held for developing the dialectic approach to critical theory research. Marcuse defined the power behind the dialectic as the power of negative thinking. In this sense, negative thinking is equated with critical thinking, the forces that lead to the destruction of existing circumstances and make room for alternatives: negative thinking is historical thinking and historical thinking is critical thinking (p. 229).

Held (1980) noted that Marcuse focused specifically on the labor process, defining it as the process of becoming, of satisfying a need. Held explained Marcuse's perspective by referencing Marcuse's 1933 work, *Reason and Revolution*. In this book, Marcuse stated that labor is the mechanism through which man finds his place in the historical process (as cited in Held, p.235). Marcuse considered labor to be a potentially "self-directed and free activity" when it is free from the restrictions of production (p. 236). However, Marcuse also pointed out that the worker has very little control over the labor process, and competition and the need to possess endanger the capacity of the worker to be fully free. This notion is exemplified by a central tenet in Marcuse's work that

"the capacity of human beings to realize their essence evolves and changes over time" (Held, p.240).

*Habermas: Emancipation of Dominance*.  Strongly influenced by the Frankfurt School, Habermas is considered by Held (1980) to be the leading spokesman for a new generation of critical theorists.  Habermas (as cited in Held) developed a number of fundamental concepts around emancipation from domination, many of them involving analysis of language:

1. The theory of cognitive interests defines conditions for the possibility of knowledge.  As a result of self-reflection and self-determination, knowledge is generated and enhances autonomy and responsibility.

2. The theory of communicative competence promotes the notion that all speech is oriented to the idea of a genuine consensus.

3. The theory of social evolution states that, through work and interaction, the human species evolves into separate, but interrelated dimensions, the development of the forces of production, and the development of normative    structures of interaction. (pp.  255-256)

Like Marcuse, Habermas' research focused on work and interaction (Held, 1980). Habermas defined work as instrumental or purposive-relational action, and interaction as communication (Held, p.257).  Seen independently, work is about individual control over processes and procedures, and managing technical

knowledge. Interaction is about establishing norms and rules to successfully work with others. Habermas (as cited in Held) believed that through work and interaction, "the human species evolves into two separate but interrelated dimensions, namely the development of the forces of production and the development of normative structures of interaction" (p. 258).

Habermas' work covered a broad range of concerns that include an historical examination of social change, historical materialism, analysis of crisis, and a critique of positivism (Held, 1980). Held contends that some of Habermas' most important contributions addressed the problem of providing a justified foundation for critical theory (p. 330). Table 2.6 is a summary of these ideas and Habermas' foundation for critical theory. Habermas developed an analysis of discourse that included strategies for analyzing speech and a process of understanding and theorizing the interactions of people and society. Through this work, he identified progressive levels of reflection that he termed "radicalization of argument" (Held, p.343). According to Held, Habermas believed that a claim could only be validated if it is possible to move freely between different levels of discourse, the theoretical and the practical. The conditions that make such a fluid conversation possible must ensure equal opportunity for discussion for all participants, free from domination. The resulting consensus is a grounded or justified consensus (p. 343). Held concluded his discussion of Habermas by stating that, "critical theory is, therefore, grounded in a normative standard that is

not arbitrary, but 'inherent in the very structure of social action and language'"

(p. 345).

Table 2.6.  A Summary of Habermas' Ideas and His Foundation for
              Critical Theory

| STEPS IN RADICALIZATION | THEORETICAL DISCOURSE | PRACTICAL DISCOURSE |
|---|---|---|
| Acts | Statements | Commands/prohibitions |
| Grounding | Theoretical explanations | Theoretical justifications |
| Substantive language criticism | Metatheoretical | Metaethical/metapolitical |
| | Transformation of language and conceptual systems | |
| Self-reflection | Critique of knowledge | Formation of rational critical will |

 SOURCE: Held, 1980, p.259.

*Critical Pedagogy, Critical Theory, and Enlightened Thought*

        Giroux (2004) has recognized that pedagogy has played an important role

in critical theory.  He defined critical pedagogy as learning how to become a

skilled citizen by learning how to define values and make considered choices:

"Critical pedagogy emphasizes critical reflexivity, bridging the gap between

learning and everyday life, understanding the connection between power and

knowledge, and extending democratic rights and identities by using the resources

of history" (p. 33). Critical theorists have experienced resistance from many

educators toward this application of pedagogy, which places education in the

position of intervening in politics. Giroux argues that the most critical challenge

facing educators is to establish conditions under which students could address the

relationship between knowledge and the power of self-definition and social

agency. Through such practices, students would develop the skills, knowledge,

and authority they need to inquire and act upon anti-democratic forms of power, as

well as to take responsibility for societal injustices and inequalities (p. 34). Giroux

noted that critical theorists have suggested that educators look at historic

applications and real social needs. In such educational settings, critical pedagogy

would connect learning and everyday life, creating the context for democratic

thinking and social change.

      According to Giroux (2004), successful critical pedagogy cultivates

specific social competencies that are essential in productive citizens. Social

competencies are developed through assignments that challenge students' capacity

for understanding and critically judging the connection between politics and social

responsibility. The outcome of such educational practices is the development of

thinking human beings who are    contributing, productive members of society.

      Giroux (2004) has explained that this redefinition of the role of the

educator can positively impact current policies and practices that limit the

possibilities of disenfranchised students. Access to quality education is limited by

the availability of loans, resources, public support, and the rising cost of tuition.

Opportunities for women and students of color are decreasing as a direct result of changes in affirmative action policies. Giroux believes that critical pedagogy is a viable means of allowing students to become change agents who link knowledge to social responsibility, and learning to social change.

*Components of a Fully Developed Critical Theory*

Fay (1987) preferred the term "critical social science" over "critical theory," believing that critical social science emphasized the scientific character of the process. Fay stated that the practical intent of critical social science is achieved only when enlightenment, empowerment, and emancipation are complete (p. 29). He identified specific conditions that are necessary for critical theory to be scientific, critical, and practical. One of these conditions is that a crisis must exist in the social system. That crisis must be caused, in part, by the false consciousness of those experiencing the crisis. The false consciousness must be amenable to the process of enlightenment, and that enlightenment must lead to emancipation, or to a situation in which a group radically alters its social arrangement to alleviate its suffering (p. 32). When all of these conditions are in place, the resulting theory reflects each component as a series of interconnected sub-theories.

When the necessary conditions of enlightenment, empowerment, and emancipation are in place, Fay's (1987) system is scientific because the theories

are genuinely explanatory and are subject to public, empirical evidence.  The

process criticizes a group's perception of itself and its world (theory of false

consciousness).  More importantly, however, critical theory provides a systematic

critique of a group's self-understanding and social practices, allowing those in the

group to develop a knowledge base that can change the way they live (theory of

crisis).  The practical component spells out the mechanism whereby the

enlightenment of a group can occur (the theory of education), reveals what aspects

of lives the group must change to lead more satisfying ones, and provides a plan of

action (theory of transformative action)

(pp. 36-39).

*The Educative Component of Critical Theory*

Critical theory has found an established place in many aspects of

educational research.  Carr and Kemmis (1986) defined three components of

critical education science:   (1) educational research conducted by educators, (2)

critical analysis directed at the transformation of the educational practices,

understandings, and values of those involved in the process, and (3) the

transformation of the social and instructional foundations that provide frameworks

for their actions (p. 156).  The authors recognized that critical educational science

requires practical grounding in research practices by creating critical communities

of teachers, students, and others.  Carr and Kemmis cited action research as a form

of self-reflective enquiry undertaken by participants in social situations to improve

the rationality, understanding, and circumstances of their own practices (p. 165).

Carr and Kemmis (1986) identified the critical need to know how the self-

understandings of individuals play key roles in educational theory. They named

five components that are required of educational theory. These components define

the active role of participants and relate the success of educational theory to its

connection with practice:

- Reject positivist ideas of rationality, objectivity, and truth.

- Accept the need to employ the interpretive categories of teachers.

- Provide ways of distinguishing ideologically distorted interpretations

  from those that are not; and provide some view of how to overcome

  these misunderstandings.

- Be concerned with identifying and exposing those aspects of the

  existing social order that frustrate the pursuit of rational goals. Offer

  theoretical accounts which make teachers aware of how they may be

  overcome.

- Educational theory is practical; its status will be determined by how it

  relates to practice. (pp. 129-30)

Much has been written about Paolo Freire regarding his views on education

for social justice. Teodoro (2003) has noted that Freire spoke about history as the

time and space of possibility.  Teodoro provided four themes that connect Freire

and early critical theorist Habermas:

1. A philosophy of social science that justifies a critical social science

   oriented toward the possibility of emancipation.

2. A theory of society that identifies social and cultural contradictions that

   create possibilities for transformation.

3. Understanding the social subject as related to universal developmental

   possibilities that are affected by historical forms of domination, but are

   potentially challenged through critique and practice.

4. Conceptualizing individual and collective learning that suggests

   strategies for rethinking the relations between education and

   transformative change. (p. 324)

Freire (as cited in Teodoro, 2003) called for the participation of teachers in the

construction of social movements, with a fundamental element being an alliance

between theory and teacher practice.  Freire stated that teachers must understand

that an act of teaching is an act of love and is born of the ability of teachers to

listen closely and respectfully to how students speak and how they understand

their own histories (Teodoro, p. 326).

In an interview, Freire revealed to Leistyna (2004) the importance of

dialogue in Freire's work:

> The teacher who seeks to dialogue has to be very reflective, constantly refining his or her epistemological curiosity and reflecting on his or her view of the world . . . . The teacher also needs to engage the students in epistemological uneasiness in a way that inspires them [the students] to revisit the knowledge that they already possess. (p. 20)

Leistyna has explained that Freire viewed a teacher as a facilitator of learning. The teacher illuminates the subject in such a way that stimulates interest, curiosity, and questioning in the learner. The teacher as facilitator becomes the conduit through which the student guides his own learning.

*Applications of Critical Theory*

The influence of educators can be seen in a wide range of critical applications. The researchers represented in this section demonstrate the interdisciplinary applications of critical theory, the central role of practice as verification of theory, and the uses of dialogue and history to substantiate findings. The connecting theme is an examination of change through the eyes of critical analysis.

Ellsworth (1989) put critical theory to the test in her university classroom. She and her students at the University of Wisconsin developed a course to examine anti-racist pedagogies in relation to racist acts occurring on campus. The course was based on the voices and experiences of the participants, and on resources that class members brought to the discussion. The outcome allowed Ellsworth to examine the authoritative role of the teacher and the resulting difficulty in generating authentic participation of students. She also looked closely at how the

defining characteristics (White, female, middle class, educated) of the participants impacted their perceptions and understandings. The outcome of this critical examination of racism was that the students worked through the difficulties of communication and difference, and they developed three major activities that raised the awareness of social justice on campus.

Fifteen years ago, a book titled *Savage Inequalities* (Kozol, 1991) raised both awareness and hackles around the inequities in the public school system in the United States. Kozol combined the voices of children and teachers with data about per-pupil spending, graduation rates, and economics to present a powerful argument for the need to recognize and correct the growing knowledge gap in the U.S.

Apple (1995) has challenged politicians, believing that they have narrowed the role and the possibilities of schools by tying school success to test scores. He has critically examined the relationship between education, economics, and politics. He has equated controls in the workplace with controls in education. As an example, Apple connected the notion that the pace of the machine controls the pace of the machine operator in the workplace, with the use of prepackaged curriculum tied to U.S. Department of Education school reform packages that control instruction in the classroom. Apple has proposed that the cultural and social elements of teaching fight with the goal of helping individual students make academic gains. He has seen much evidence that schools are stratifying students to provide different kinds of help for different students. The result is tracking,

which gives differential treatment to students based on race, gender, and class, and subsequently extends the social division of labor that a good education is intended to reduce. Apple has suggested that this stratification is a direct result of economists and politicians assessing the production of schools with a business yardstick.

McLaren, Martin, Farahmandpur, and Jaramillo (2004) have examined the current crisis of capitalism as it relates to the crisis of educational reform. Downsizing, outsourcing, and flexible methods of labor practices are now appearing on university and college campuses across the country. Part-time faculty positions with no employee benefits are common and go hand in hand with demands that these same professors become more productive research scholars. McLaren and his colleagues further note the devaluation of education in the contrast between the Pentagon's 2004 peacetime budget of $399.1 billion and the existence of more than 47,000 uncertified teachers who were teaching in California classrooms at that time (p. 132). The *No Child Left Behind Act* of 2001 (United States Congress) has been promoted as a tool to hold schools accountable for the underachievement of poor and minority students. Funding, supplemental services, alternative governance, and research-based reading programs are managed and mandated by the federal government. As critical educators, McLaren et al. are hard pressed to understand why critics of NCLB and government controls cannot make their voices heard through the media.

McLaren and his colleagues (2004) have identified revolutionary critical pedagogy as the vehicle for freeing the multi-racial, gendered working class to understand how their labor is being undervalued and exploited, and to reclaim their initiative, creativity, and power (p. 139). Using education as the vehicle for change, teachers from working class backgrounds will most likely adopt critical pedagogy. Critical educators would incorporate social values in their classrooms, seeing many positive possibilities in discussing and analyzing class issues within the microcosm of their classes. These authors anticipate that, as children begin to recognize inequality and unfairness in their own social context, they will take that knowledge beyond the schoolhouse door and raise the awareness of the people within their circle of influence.

The practice of social justice education provides full and equal participation of all social groups in education through equitable distribution of resources. Mariage, Paxton-Buursma, and Bouck (2004) have identified the primary barriers to social justice in schools as inequity across multiple layers of society, practices of omission and commission in teaching, and social hierarchy (p. 535). The successful practice of social justice recognizes the complexities of teaching and learns to work with the demands of time, decision-making, lack of tools, and lack of power to make lasting change. The authors examined five systems that sustain change: 1) cohesive leadership systems, 2) cohesive curriculum development, 3) systemic pedagogical professional development, 4) data collection and analysis systems, and 5) organizational systems (p. 545). The

outcome of their work supports the notion that this level of educational change happens through a combined and complex analysis that makes critical theory necessary to interrogate the process and uncover issues of power, privilege, and positioning.

Lather (2004) has applied critical theory to argue against using traditional scientific research methods as the driving force behind the accountability movement in public education in the United States. The National Research Council (NRC), in its two-year review of the *No Child Left Behind Act*, has so narrowly defined science-based evidence that the intent to discipline educational research is clear (Lather, p.16). Lather argues that the NRC has disregarded 40 years of development in quantitative and qualitative research practices. Such disregard by a notable research organization lends support to Lather's challenge that, "the degree to which the kinds of problems that teachers face are open to solution by research is precisely the question" (p. 21). Lather suggests a three-pronged approach that applies critical theory to the question of whether research is driving policy or policy is driving research. The first step is a sustained critique of NRC's policy-driven stance on research. Lather has labeled the second step a "rhetorically strategic intervention," and argues for collaboration and exchange of information to formulate educational policy, rather than driving educational practice by controlling research. The third step is a strategic infusion of critical theorists and practices into the ranks of program evaluation and policy analysis. This step includes participation in the American Educational Research

Association's educational policy and politics forum, and it includes participation in

the American Society for Curriculum and Development publications and

conferences (pp. 22-29).  In essence, Lather argues that:

> the essential first step towards a better form of practice [is] one that
> consists of a willingness to work with, rather than against, the actors in the
> domain of application; one that is collaborative rather than imperious;
> modest rather than megalomaniac; and wishing to learn rather than itching
> to instruct. (p. 29)

More examples of critical theory in practice look at education through

other content areas.  International relations theory cited Dewey's incorporation of

educational theory as a component of their work on relationships (Widmaier,

2004).  Dewey (as cited in Widmaier) encouraged the development of teachers'

unions on the premise that connecting teachers with workers would generate

dialogue and increase teachers' understanding of the social and economic needs of

workers and their children.  Dewey believed that this interaction would promote

progressive educational reform and subsequently improve education (p. 434).

Widmaier (2004) has noted that economist John Kenneth Galbraith

believed that greater dialogue between academics and the general public around

wage and price guidelines, balancing public and private interests, and the

appropriate role of the state in stabilizing the market would expand the perspective

of economists and move them beyond data-driven decisions to socially driven

decision-making (p. 435).  Widmaier explained that Galbraith, like Dewey,

recognized the imbalance between private and public sector wants and needs.

Both Dewey and Galbraith recognized the value of and the need for conversation,

and provided venues to close the gap between practitioners, policymakers, and the public. Widmaier drew directly from critical practice to suggest that economists look to historical narratives to provide lessons in context that can increase understanding of economic crises, and encourage economists to interpret such events before they react to them.

Perriton and Reynolds (2004) have argued that critical management education should reposition itself in much the same way that critical education was influenced by the work of Ellsworth. Ellsworth (as cited by Perriton & Reynolds) challenged that the traditional authoritarian teacher-student relationship interfers with the interpretation of emancipation promoted by critical theorists like Freire. Giroux and McLaren (as cited by Perriton & Reynolds) have stated that students and teachers alike are capable of a shared understanding that could result in change (p. 62). Perriton and Reynolds have concluded that critical management education has drawn on these premises put forth by educational critical theorists, and has promoted a commitment to questioning traditional practices and assumptions about management and education, incorporating community and fairness into management practices.

Human rights education has also examined the relationship between ethics and education through critical theory. Sliwinski (2005) has reflected on the impact of knowledge, specifically asking if witnessing oppression or violence affects a student's capacity for compassion. Sliwinski examined two dynamics of learning identified by Freud, learning about and learning from, and the differences in

insight gained from each experience.  Sliwinski has suggested that human rights education would look very different if researchers recognized and addressed the "interplay between the recognition of a sense of justice and the recognition of justice's breakdown" (p. 230).

*The Research Process*

The scope of this review of literature sets the stage for research that examines the need for public K-12 schools to critique and revise their practices regarding the preparation of high school graduates for the workplace.  Businesses have shared their views regarding what K-12 skills are transferable to work.  Educational policy has changed multiple times in reaction to pressure from business.  The focus of education has remained on academics, despite a 60-year record that shows that the majority of high school graduates did not attend or did not complete college.

The perspective of students and workers has been consistently missing from the research. We need to know what students are finding when they enter the workforce and if they are prepared for work.  The intent of this research has been to take the first steps toward bringing students' voices into a conversation that informs schools about what works for students after high school.

Chapter Three defines a mixed methods approach to gaining this information by combining survey data with a grounded theory approach to

interviewing. The practices of critical theory are used to identify the connections

and disconnections between the success of high school graduates in the workplace,

and their perceptions of high school and work. The requirements of critical theory

identified by Fay (1987) are met in the following ways:

1. Scientific - Surveys of high school seniors are traditional quantitative tools

   and have been analyzed using traditional analytical processes. Interviews

   have been conducted and analyzed using accepted grounded theory

   practices.

2. Critical - The processes of analysis used in this study systematically

   critiqued the participants' perceptions of themselves and their experiences,

   and compared the responses of the two groups and the two research

   practices.

3. Practical - The practical component of this research process identified

   shared characteristics between the survey group and the interview group,

   and was expected to reveal aspects of the high school experience that could

   be changed to foster an increase in workplace success for high school

   graduates.

CHAPTER THREE

METHODOLOGY

Historically, educational research has been guided by traditional scientific methods. These methods use data collection tools that can gather information and can then generalize that data to numerically define the particular circumstance and validate the outcome through proven statistical analysis. In quantitative research, the researcher intentionally remains separate and objectively distant from the subject. Guba and Lincoln (1994) have noted two important time periods that were significant in the development of qualitative research as a strong contender to traditional quantitative methodology. Between 1970 and 1986, "qualitative researchers had (acquired) a full complement of paradigms, methods, and strategies to employ in their research" (Guba & Lincoln, p.18). The authors saw the period between 1986 and 2000 as a crisis of representation. A reflexive quality emerged in research and writing, and researchers began to recognize the importance of gender, class, and race (p. 19). Interpretive theories became more common as writers continued to challenge older models of truth and meaning (Rosaldo, 1989, in Guba & Lincoln, p.19). Qualitative researchers believe that a complete description of particular phenomena includes interpretation of the researcher and interaction with the subject. Qualitative researchers also believe that research design can evolve throughout the research process, given that the

information that emerges throughout the research process can redirect the work.

Assumption and interpretation play important roles in defining the outcome of

qualitative research (Gall, Gall, & Borg, 1999; Guba & Lincoln, 1994; Tashakkori

& Teddlie, 1998).

The choice between qualitative and quantitative methods is often a direct

reflection of the beliefs of the researcher. Guba and Lincoln (1994) have defined

paradigms as worldviews or belief systems that guide researchers in their practice.

The positivist paradigm is reflected in quantitative research methods, and the

constructivist paradigm is linked to qualitative practices. Long-standing debates

between positivist/postpositivist and constructivist practitioners have been

described by Tashakkori and Teddlie (1998) as paradigm wars. As these wars

have run their course, a separate paradigm has emerged called *pragmatism*.

According to Tashakkori and Teddlie, pragmatism can lead to compatibility

between the two schools of thought, and it comes in the form of mixed methods

research. Mixed methods studies apply both qualitative and quantitative research

methods to examine the same phenomenon, either within the same study or in

different complementary studies, a process also called *triangulation* (Tashakkori &

Teddlie, 1998, p.18).

*The Research Objectives*

This research study focused on one of the many missing pieces that could provide support for high school graduates entering the workforce. The missing voices of high school students and noncollege-educated workers shed light on the following research objectives:

1.  To increase my understanding of the needs of students who enter the workforce immediately after high school.

2.  To compare the perceptions of high school seniors about their school experiences with the experiences of workforce participants who did not attend college.

3.  To determine whether or not study participants perceive that the K-12 education system is meeting the needs of students entering the workplace directly after high school.

4.  To compare the skills and traits identified by study participants with those identified by business groups as desirable entry-level skills and traits.

5.  To determine whether or not the focus of education should be redefined to better support the noncollege-bound student.

The following research questions evolved through the process of this investigation and have guided this study:

-  Can the voices of students and workers influence the relationship between business and education, and the direction of school reform?

- Should education be taking another look at its focus on academic

    preparation and its support of students entering the workforce?

The results of this study are expected to inform educators and business people

about the experiences of high school graduates in the workplace, as well as shed

light on which skills and traits learned in high school are transferable to work.  The

results also suggest some new directions for high schools regarding workforce

preparation.

*The Context of the Study*

As the literature was reviewed for this project, many questions arose that

pointed toward a mixed methods study.  A lack of communication between the

education and business communities about workforce preparation was uncovered.

Another puzzle was the persistent focus of schools on academic preparation,

disregarding data that demonstrated the number of high school graduates not

attending college after high school has hovered at 55% for 60 years (Adelman,

1993; Wenrich, 1996).  In contrast, economists, business people, and politicians

have all pushed schools to produce more effective workers.  These groups agree

that improvement in the workforce preparation of noncollege-bound high school

graduates entering the workplace is sorely needed.  Yet, little success has been

seen in workable plans to support high schools in this endeavor.  Multiple studies

cite the characteristics that businesses feel they need to see in entry-level workers

(Australian Department of Education, Employment, & Workplace Relations, 2000;

Nelson et al., 2000; Scheetz, 1998; Smith & Scoll, 1995).  However, no research

was found that included the experiences or the feedback of high school graduates

who are currently in the workplace.

*Research Methods*

Cresswell (2003) attributed the use of multiple methods of data collection

in the same study to Campbell and Fiske, who employed several methods of

research in 1959 to study the validity of psychological traits (p. 15).  As other

researchers began to apply Campbell and Fiske's multi-method matrix in different

applications, concerns arose that the limitations or biases of each research method

might cancel each other out when used in the same study.  According to Cresswell,

the result was the development of data triangulation, a way of connecting

quantitative and qualitative research methods used in the same study.  Three

general strategies have developed that define triangulation in mixed methods

studies.  Cresswell refers to these strategies as sequential procedures, concurrent

procedures, and transformative processes.  In a sequential procedure, the

researcher expands or elaborates on the findings of one method by applying a

second method to the same situation.  Concurrent procedures collect data through

quantitative and qualitative methods at the same time, and the researcher interprets

the findings from both studies to extrapolate the results.  In the transformative

process, a theory is deduced in the testing and verification process or is induced

through emerging patterns in the data.  In either case, the development of theory

may be directed by emphasizing either the quantitative or the qualitative

component of the mixed methods study (Cresswell, 2003).

The breadth of the audience that could be reached through this research

includes educators, the business community, and policymakers.  The nature and

paradigm of each of these populations, and the added validity achieved by

combining quantitative and qualitative research, supported a mixed methods

strategy for data collection.  This study combined quantitative survey data with

qualitative interviewing to develop a data pool that would help refine the

discussion around best approaches to preparing high school students for the

workplace.  The processes happened concurrently, and the results from each

process were analyzed independently and then compared to determine next steps.

*Surveys*

Surveys allow the same type of information to be collected from large

groups of people using one collection method (Gall, Gall, & Borg, 1999).  Asking

identical questions to each respondent minimizes bias in the responses, thus

increasing the validity of the analysis.  Portland Public Schools (PPS) administers

a senior survey annually to graduating high school seniors and agreed to allow me

to use the data from 2005-2007 as the quantitative portion of this study (See

Appendix B for a copy of the research proposal and addendum submitted to PPS).

In 2005, the Senior Survey was expanded by the high school counseling team and PPS Student Services. I was invited to participate in the survey revision. Questions were added to the survey to provide information about influences on student performance and engagement in school, and to allow students to give feedback on their experiences with school. The survey now consists of 31 questions in multiple-choice and scaled response formats (See Appendix C for a sample of the PPS Senior Survey Instrument).

*Description of the Survey.* The senior survey instrument is divided into two sections. The first section consists of 14 questions. Two questions collect information about students' plans after high school, three questions collect information about work experience during high school, and nine questions provide information about demographics, home life, schedules, and other aspects of school. The second section of the survey is a series of 17 questions that collect information on a four-item scale. The responses are "strongly agree," "agree," "disagree," and "strongly disagree." The scaled response questions group into three categories: hard skill acquisition (skills that are transferable to the workplace), soft skill acquisition (traits that lead to productive work experiences), and adult support.

A*dministration of the Survey.* The PPS Senior Survey is administered annually by high school counselors. All graduating seniors participate, taking the

survey in classroom settings.  Responses are completed on a standardized answer

sheet that is submitted by the counselors to the PPS Research, Evaluation, and

Assessment Department (R&E) for processing.  R&E then produces a report for

schools that is a straightforward tally of responses.

*Analysis of the Survey.*  The PPS survey was designed by the Portland

school district as a tool to gather information.  The data set used in this study

covers three years and 6,206 participants.  The basic analysis included (1)

measures of central tendency, (2) principal component analysis or factor analysis,

(3) correlation analysis, and (4) an inferential examination that addresses the

distribution of data through a (M)ANOVA analysis to understand how important

characteristics may have influenced outcomes on the survey data.  The analysis

also includes (5) a comparison of noncollege-bound and college-bound responses.

The number of participants in each year of the survey exceeded 2,000

students.  The number of students who identified themselves as going into the

workforce right after high school was much lower than the 55% reported as a 60-

year historical trend in the literature (Adelman, 1993; Wenrich, 1996).  It should

be noted that the survey data were self-reported by students.  These data did not

assess whether or not the participants who stated that they were attending college

had submitted applications or had been accepted to college.  Recalling Table 2.5,

PPS (2007) data that tracked students entering college showed that 38% of the

18,981 students graduating from PPS high schools between 1999-2000 and 2005-

2006 did not continue formal education directly after high school. If the differences in Table 2.5 between the numbers of students starting college right after high school and the numbers of students graduating from college are compared, the number of PPS students not attending or completing college in the expected time is much closer to 55%, suggesting that the pattern of youth entering the workforce has not changed in 60 years.

*Interviews*

The second group of data was gathered through interviews of high school graduates who are considered successful at work. Interview questions were designed to gather information about the relationship between the participant's work and high school experiences. Interviewees were asked to share their thoughts on what components of high school helped them be successful workers. They were also asked to make recommendations that would help high schools improve support for graduating seniors who move immediately into the workforce.

A*dministration of the Interviews.* Participants for the interview process were difficult to locate. I began searching for participants by contacting high school counselors who worked in the 10 comprehensive high schools associated with PPS. I attended a high school counselor meeting and presented my research and my need for interview participants. The 30 counselors in attendance reported that they stayed in contact with former students who attended college, but not with

graduates who entered the workforce. (This phenomenon is borne out in multiple studies that track only college-bound students.) The counselors suggested that I contact the Alternative Education Office with the school district. Although my study does not address alternative education, I followed their suggestion. The data-base manager of the Alternative Education Office suggested that I send out a mailer to former students. Due to the response time, cost, and follow-up involved in direct mailing, I decided to ask for referrals from teachers and other acquaintances instead. I found a similar result: college educated people generally do not know people who are not college educated. In the end, the interview participants were located through friends of friends.

After the referring person made the initial contact, I telephoned each participant to schedule an interview. The participants chose the locations of the interviews. Some interviews were held at the school where I work, some at the participants' offices, and others at the participants' homes. Each participant signed a release-of-information agreement that met the requirements of the OSU Internal Review Board for studies involving human participants (See Appendix E for OSU Internal Review Board's approved informed consent form). Each person agreed to allow me to tape record the interview.

I began each interview with an initial set of questions that followed three general topics:

- Traits or characteristics that have led to positive workplace experiences.

- A description of each participant's school experiences.

- Changes high schools could make to support graduates who enter the workforce directly after high school.

The initial set of interview questions were:

1. What traits or characteristics make you successful on the job?

2. Tell me what you learned in school that helped you be successful at that job?

3. What was the reason that you decided not to go to college?

4. Did you have a job when you were in high school? If so, what kind of job?

5. Tell me what challenged you the most in high school?

6. What would you have done differently when you were in school?

7. Have there been adults in your work or school life who made a difference? How?

8. What do you think the school could do differently to help more kids be successful in the workplace?

*Analysis of the Interviews.* The responses to the interview questions were analyzed using a grounded theory approach. Grounded theory is a research method in which the researcher attempts to uncover a theory grounded in the responses of the participants in the study and an explanation of the process, or a new theory, can be derived from the data (Cresswell, 2003). Consistency and

patterns in the data provide the grounding or rationale for the new theory. Data is collected and refined in multiple stages throughout the interview process. Cresswell characterized grounded theory as a constant comparison of each interview with categories that emerge from the analysis of prior interviews and the sampling of different groups to maximize the similarities and differences of the information.

I recorded each interview at the interview session on a digital tape recorder, and then transcribed each tape into text using Dragon NaturallySpeaking 7.3 software. After each interview was transcribed, I followed the grounded theory analysis process that I learned in an OSU graduate course titled ED 614 Grounded Theory taught by Dr. Ken Winnograd. The four-step process of analyzing each interview involved initial coding, axial coding, selective coding, and, finally, developing analytic memos. Initial coding is a line-by-line analysis to identify meaning in the data. Initial coding is informed by the researcher's background knowledge, which is referred to as sensitizing concepts. Sensitizing concepts provide starting points and add a deepened perspective to the initial analysis (Charmaz, 2001). Axial coding is a coding paradigm that describes the components of the study. The elements of the coding paradigm emerge during the process of axial coding. Selective coding involves a second review of each interview transcript to uncover conceptual ideas in the data. The final step is the construction of a memo for each transcript that represents a synthesis of the

findings.  A new theory can result from the analysis of the data.  The data tables for the interviews are found in Chapter Four.

*Participant Populations*

*Surveys*

Portland Public Schools (PPS) provided Senior Survey data from Spring 2005, Spring 2006, and Spring 2007 for this study, allowing this research to be classified as a longitudinal study.  Table 3.1 describes the survey participant breakdown across three years, with a particular focus on students not attending college.  The participants were divided into six sections that identified the self-reported direction of the students after high school:  four-year college, community college, technical school, work, military, and no plans.  Data were also available for dropouts who had returned to complete high school.  Table 3.1 provides the total numbers of students graduating in each year, and includes the data that reflects self-reported post-high school plans for noncollege-bound high school graduates. The number of graduating seniors showed little variance; the graduates in 2006 and 2007 were 100 students greater than in 2005.  Of the total numbers of noncollege-bound students participating in the survey, a greater number of students had no plans after high school than did the number of students going into the workforce.

Table 3.1.  Portland Public School Senior Survey Participants, 2005-2007

| Survey Participants | 2005 | 2006 | 2007 |
|---|---|---|---|
| Total # Graduating Seniors | 2,005 | 2,111 | 2,090 |
| Self-reported responses of noncollege-bound youth: number and % of total graduates | | | |
| Going to work | 118 (6%) | 120 (6%) | 111 (5%) |
| Military | 31 (2%) | 43 (2%) | 27 (1%) |
| No plans after high school | 141 (7%) | 167 (8%) | 134 (6%) |
| Noncollege-bound totals | 290 (14%) | 330 (16%) | 272 (13%) |

*Interviews*

The demographics of the interview participants are described in Table 3.2. Six high school graduates who were at least five years away from high school and who were considered successful at work by the people who referred them were interviewed for this study.  Four females and two males ranged in age from 23 to 47.  Each participant had completed high school.  Four of the six had taken occasional college classes well after completing high school.  Their jobs, family backgrounds, and personal circumstances vary greatly.

Table 3.2.  Profiles of Interview Participants

| | Gender | Age | Profession | Years on the job | Personal Life | Family background | Schooling |
|---|---|---|---|---|---|---|---|
| 1 | F | 23 | Data base technician and trainer | 5 | Married No children | Mother- school secretary Father deceased | Private high school. Currently taking college classes. |
| 2 | F | 31 | Educational assistant in pre-kindergarten | 10 | Single mom 2 children | Parents are farmers | Home schooled in high school. Currently taking college classes. |
| 3 | M | 47 | Facilities manager at pub/hotel | 5 | Single | Mother – published writer Father- deceased | Tech high school |
| 4 | F | 41 | Dispatcher for trucking company | 10 | Single mom 1 child | Mother – sales Father – deceased Stepfather – family money | High school. Sporadic college classes. |
| 5 | M | 47 | Small business owner – restores antique gas pumps | 10 | Married No children | Mother – graveyard blue collar worker Father – deceased when he was 7 | Left HS midyear of senior year. |
| 6 | F | 28 | Financial planner | | Married 3 children | Mother – business owner | High School. 2 college classes. |

*The Significance of the Study*

The Portland Public Schools Senior Survey was not designed as a quantitative research tool; it is simply a mechanism for gathering information. My study focused on 17 questions from the survey that provide information on students' perceptions of school and work. These questions most closely parallel the interview questions that I used to gather the workers' perceptions of school and work. The survey data were analyzed using descriptive statistics, focusing on the comparison of means across three years of data. Correlations across the survey questions were also examined for significant responses. The results were then compared with the analysis of the interviews.

The data were expected to reveal what skills learned in school were transferable to work, and what participants felt was missing from their school experiences that would have helped them at work. The identified skills were compared with the lists of skills that businesses desire. The final step, using mixed methods analysis, was to review the survey results and the interview results side by side. The expectation of this step is that the parallels and differences in the two data sets will enhance the validity of the findings.

The outcome of this study is expected to provide the framework for conversations and recommendations to the education community to improve the support provided to students entering the workforce after high school. The data is also expected to fuel conversations between education and the business communities, conversations that will include the voices of workers and students.

The validity of the results are strengthened by the combined quantitative and

qualitative approaches, and are the accepted research practices in both the

education and the business communities (Gall, Gall, & Borg, 1999; Ghauri &

Gronhaug, 2005), opening the door to sharing the findings in both settings.

CHAPTER FOUR


RESEARCH FINDINGS



Three core findings emerged from the data. The first is the absence of significant adult relationships in the high school setting. The second is the lack of relevancy of high school coursework. The third is the importance of soft skills to productive high school and workplace experiences. Each of these findings is supported by data from the PPS Senior Survey and from worker interviews. These data will first be defined relative to each data source and then will be used to explain each of the three findings.



*Senior Survey Findings*



*Basic Analysis: Measures of Central Tendency*

The primary purpose of this study was to learn from student voice. The PPS survey provided an avenue for accomplishing this goal through questions 11-28. These questions measured the students' interpretations of their school experiences as the experiences related to work and their future plans. The questions are listed in Table 4.1, which describes the measures of central tendency, or the mean responses, to questions 11-28 for each school year. Students could respond to each question on a 4-point scale: 1 = strongly disagree, 2 = disagree, 3 = agree, and 4 = strongly agree. The mean score was determined by totaling the

responses to each question, and dividing the total by the number of respondents

participating in that year.  The mean scores by question ranged from 1.94 to 3.28.

The variation in means across years ranged from .01 to .12, with most responses

varying by only .02 to .04 points.  This trend showed a strong consistency of

perceptions among students for each question across three years, which means that

the data are very reliable as an assessment of perception for questions 11-28.  The

data also show that nearly all responses spanned the range of 2.5-3.0, which means

that most    students' responses approached agreement with the questions as stated.

Table 4.1.  A Comparison of Means by Year for Questions 11-28,
        Scaled Responses

| | 2005 | 2006 | 2007 | | 2005 | 2006 | 2007 |
|---|---|---|---|---|---|---|---|
| q11 School offered me the opportunity to apply my classroom learning to real life situations. | 2.73 | 2.73 | 2.74 | q20 School should have required that I do more homework. | 1.94 | 2.01 | 1.95 |
| q12 School offered me the opportunity to apply my classroom learning to the workplace. | 2.54 | 2.58 | 2.57 | q21 The adults in my school care about me and treat me with respect. | 2.96 | 3.01 | 3.00 |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | 3.00 | 3.01 | 3.01 | q22 School provided me with the opportunity to participate in job shadows and/or internships. | 2.26 | 2.33 | 2.38 |
| q14 I should have worked harder on schoolwork while I was in school. | 2.92 | 2.93 | 2.99 | q23 My high school education provided me with the following skills to help me succeed: Reading, writing, math skills. | 3.27 | 3.24 | 3.28 |
| q15 School counselors and/or teachers assisted me in exploring possible career opportunities. | 2.46 | 2.55 | 2.58 | q24 How to work effectively and manage my time well. | 2.76 | 2.80 | 2.76 |
| q16 Teachers expected me to work up to my potential and challenged me to do my best. | 3.01 | 3.00 | 3.01 | q25 How to get along with others. | 2.90 | 2.96 | 2.94 |
| q17 School has prepared me with the skills I will need in college and/or the workplace. | 2.84 | 2.87 | 2.86 | q26 The importance of good attendance and being on time. | 2.81 | 2.83 | 2.83 |
| q18 School should have required me to meet higher academic standards. | 2.58 | 2.68 | 2.64 | q27 How to communicate effectively. | 2.92 | 2.98 | 2.96 |
| q19 School should have placed more emphasis on helping me prepare for my future career. | 2.88 | 2.84 | 2.85 | q28 How to write a resume and practice interview skills. | 2.42 | 2.45 | 2.45 |

These 18 questions naturally divided into three categories: hard skill acquisition, soft skill acquisition, and adult support.  In the context of this research, hard skills are defined as access to the workplace and/or career planning, and measurable skills that are transferable to the workplace.  Soft skills are defined as traits that lead to productive work experiences.  Students' access to the workplace and/or career planning through school was described by questions 11, 12, 13, 15, 19, 22, and 28.  Responses to q14, q17, q18, q20, and q23 further define hard skills as academic skills, effort, and homework.  Questions 11 and 12 referenced real time applications of classroom learning and were supported by opportunities to develop future plans through access to resources (q13, q19, q22, q28) and adult support specific to career planning (q15), placing question 15 in the hard skills category.

The qualities that reflect the soft skills that businesses expect in new hires (identified in Chapter Two, Table 2.3) are measured by q24, q25, q26, and q27. These questions include time management, attendance, developing working relationships, and effective communication.  (The content and responses to these questions are examined in detail later in this chapter in a comparison of survey results and interview analysis.)  Questions 16 and 21 pursued adult support examining the expectations of teachers and relationships with adults at school.

*Basic Analysis: Principal Component Analysis/Factor Analysis*

A principal component analysis, or factor analysis, was conducted to reduce the responses to questions 11-28 to minimal relationships by co-linearity. This decision was made to narrow the field of responses from a large data set to the most concentrated sets of data. Using an Eigen value of 1, the Cronbach's alpha result was .837 for 2005, .852 for 2006, and .845 for 2007. Cronbach's alpha measures how well a set of items measures a single unidimensional latent construct; it is a coefficient of reliability (UCLA Academic Technology Services, 2007). Statistically, concentrations of .700 are considered to be very reliable in a principal component analysis.

Three factors were discovered through the principal component analysis. These factors represent concentrations of responses and are identified in Table 4.2 as minor column headings 1, 2, and 3 under each major column heading that identifies the year the data were collected. The descriptions of the factors were determined from the content of the questions in those factor groupings. Factor 1 describes students' overall school experiences and includes all but the four questions identified in Factor 2. Factor 2 describes students' expectations, and includes q14, q18, q19, and q20. Factor 3 is a latent variable that is a product of principal component analysis. Factor 3 is an anomaly that could have resulted from the large data set and the lack of a psychometric design in the survey. Factor 3 was not statistically strong enough to warrant a discussion. Dual responses in

Factors 1 and 3 appear for q12, q15, q22, q23, and q25. This suggests that these

questions are not clearly measuring a single concept.

Table 4.2.  Principal Component Analysis of Questions 11-28

| Principal Component Analysis | 2005 | | | 2006 | | | 2007 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| q11 School offered me the opportunity to apply my classroom learning to real life situations. | .687 | | | .691 | | | .704 | | |
| q12 School offered me the opportunity to apply my classroom learning to the work place. | .688 | | | .667 | | -.309 | .667 | | -.347 |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | .587 | | | .622 | | | .630 | | |
| q14 I should have worked harder on schoolwork while I was in school. | | .502 | | | .530 | | | .492 | |
| q15 School counselors and/or teachers assisted me in exploring possible career opportunities. | .594 | | -.364 | .569 | | -.320 | .632 | | -.308 |
| q16 Teachers expected me to work up to my potential and challenged me to do my best. | .619 | | | .645 | | | .652 | | |
| q17 School has prepared me with the skills I will need in college and/or the work place. | .698 | | | .719 | | | .688 | | |
| q18 School should have required me to meet higher academic standards. | | .751 | | | .753 | | | .707 | |
| q19 School should have placed more emphasis on helping me prepare for my future career. | | .596 | | | .640 | | | .584 | |
| q20 School should have required that I do more homework. | | .704 | | | .682 | | | .712 | |
| q21 The adults in my school care about me and treat me with respect. | .595 | | | .589 | | | .578 | | |
| q22 School provided me with the opportunity to participate in job shadows and/or internships. | .545 | | -.467 | .605 | | -.407 | .615 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| q23 My high school education provided me with the following skills to help me succeed: Reading, writing, math skills. | .542 | | .306 | .535 | | .423 | .548 | | .370 |
| q24 How to work effectively and manage my time well. | .682 | | | .715 | | | .703 | | |
| q25 How to get along with others. | .634 | | .466 | .622 | | .329 | .633 | | .409 |
| q26 The importance of good attendance and being on time. | .673 | | | .663 | | | .672 | | |
| q27 How to communicate effectively. | .689 | | | .700 | | | .697 | | |
| q28 How to write a resume and practice interview skills. | .610 | | | .635 | | | .614 | | |

Factors 1 and 2 were analyzed for distributions of mean, median, and mode. No significant information resulted from this analysis. The resulting overall assessment of Factor 1 was that most respondents agreed with the items as stated in the survey. The results for Factor 2 showed that the majority of respondents disagreed only with q20 (school should have required more homework).

Focusing first on the most statistically significant responses in Table 4.2, note that responses to q18 (schools should have required higher academic expectations) are at .700 or above across three years, and responses to q20 (schools should have required more homework) are at .700 or above across two years. Both q18 and q20 are components of Factor 2, which indicates students' expectations. The mean scores on Table 4.1 for q18 show that students across three years were closer to agreement than disagreement with the statement that schools should have required students to meet higher expectations. The mean scores for q20 show that

students across three years disagreed that school should have required more homework. The responses at .700 and above, in the factor analysis for q18 and q20, signify the consistency of responses to these questions.

Single occurrences of .700 or higher in the factor analysis are reported for q11 (opportunities to apply real life applications of learning) in 2007, and for q17 (feels prepared for college/work), q24 (effective work habits, time management), and q27 (effective communication) in 2006. These responses suggest that schools may have placed an emphasis on workplace connection and soft skills development in 2006. The responses to these questions in 2007 are just under .700, which further suggests an emphasis on these skills that has been noted by students. Question 14 measures students' individual expectations of their own efforts at school; it is the lowest performing item at .502, .530, and .492, and is the only item that assesses individual expectations.

The principal component analysis defined in Table 4.2 identified a large factor or grouping of responses that addressed overall school experiences and a small factor that described expectations. The large factor (Factor 1) includes responses to all questions except q14, q18, q19, and q20, and measures students' overall school experiences. The small factor (Factor 2) includes only q14, q18, q19, and q20, and addresses students' expectations. In the analysis, the responses to the questions from each of the two factors were normally distributed. The importance of the normal distribution of data is that the responses of 6,206 participants collected over three years fell under the normal curve. This means

that a level of predictability, or reliability, exists in the survey data.  It is

reasonable to assume that additional items that could impact the data would be

normally distributed as well.  The normal distributions for both factors are

illustrated in Figures 1 and 2.

Figure 1.  Normal Distribution of Factor 1
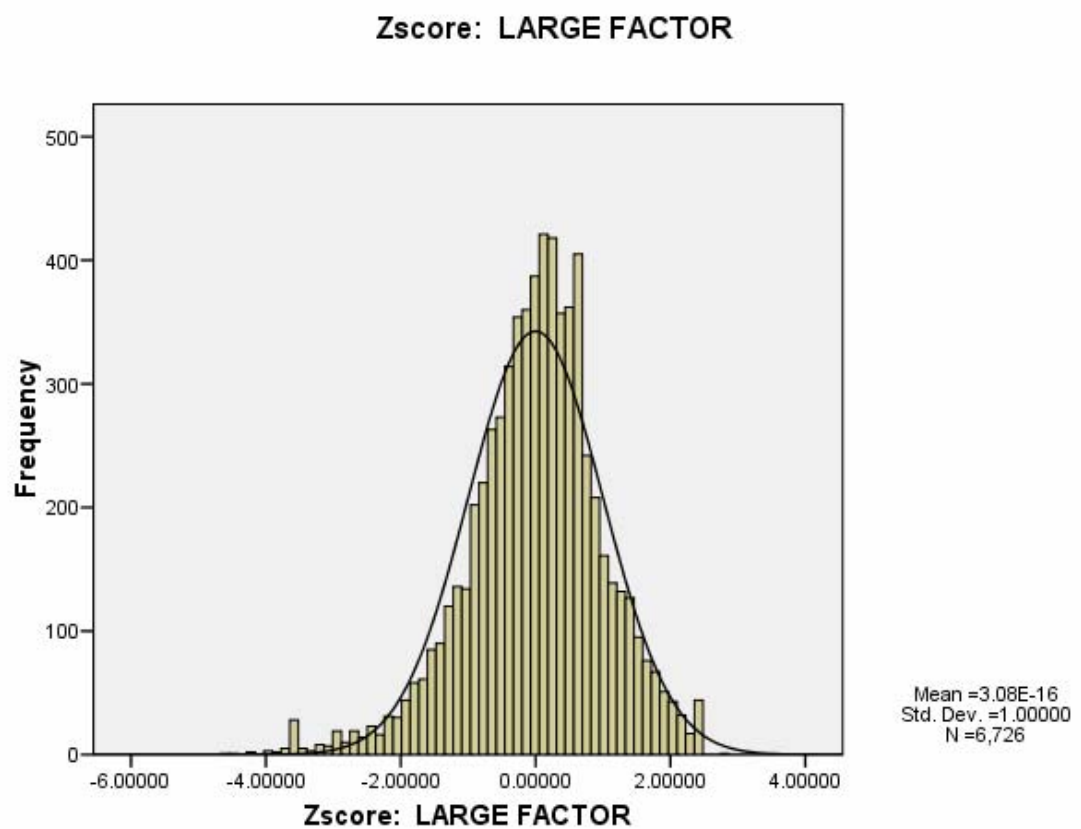
Figure 2.  Normal Distribution of Factor 2
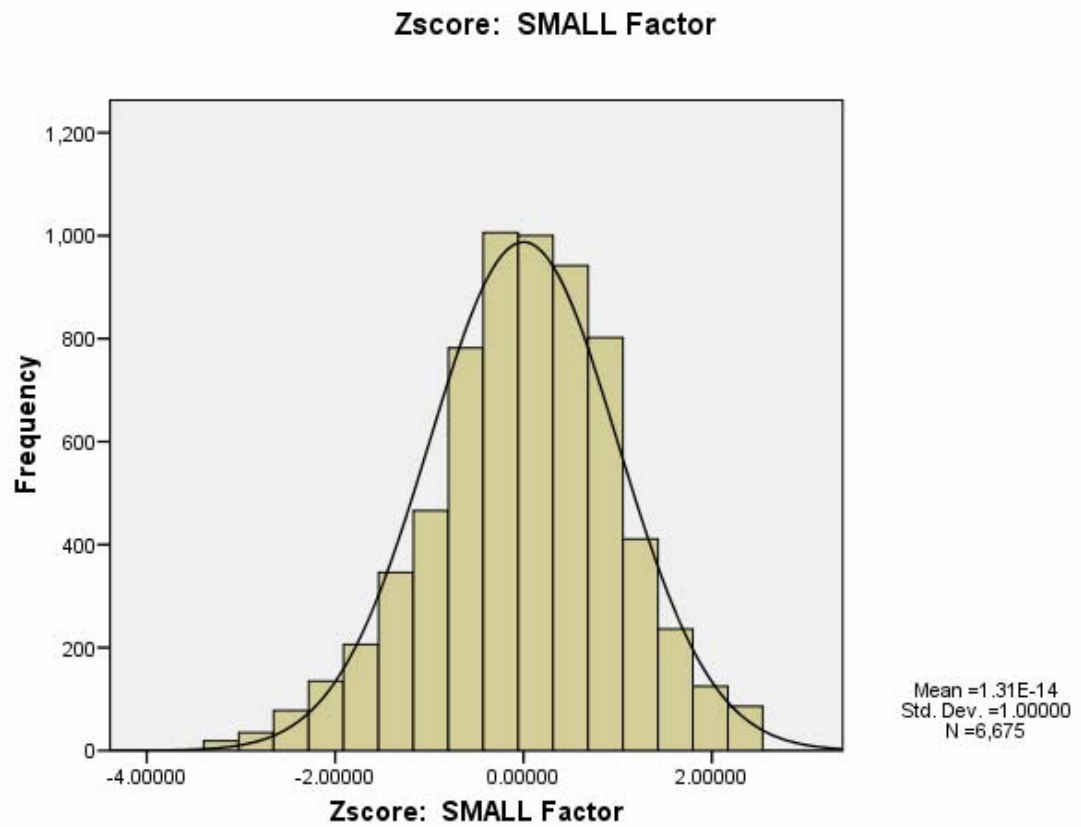


*Basic Analysis:  Correlation Analysis*

The responses to questions 11-28 were correlated for each question and each school year.  The correlation analysis was used to understand how individual questions impact other questions.  The overall correlations were high and were consistently above .300.   In order to narrow the discussion to the most outstanding responses, Table 4.3 tracks the concentrations of responses at .400 and above,

which specifically focus on q17 and q24.  Question 17 correlates at .400 and above

with q11, q12, q13, q16 and q24 across the three years.  Question 24 correlates at

.400 and above with q17, q25, q26, and q27 across the three years.

Table 4.3.  Positive Correlations Across 2005, 2006, and 2007

| **Q17**  School has prepared me with the skills I will need in college and/or the workplace. | 2005 | 2006 | 2007 |
|---|---|---|---|
| q11 School offered me the opportunity to apply my classroom learning to real life situations. | .492 | .484 | .483 |
| q12 School offered me the opportunity to apply my classroom learning to the workplace. | .445 | .447 | .423 |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | .407 | .454 | .466 |
| q16 Teachers expected me to work up to my potential and challenged me to do my best. | .452 | .464 | .461 |
| q24 How to work effectively and manage my time well. | .439 | .456 | .422 |
|  |  |  |  |
| **Q24**  How to work effectively and manage my time well. |  |  |  |
| q12 School offered me the opportunity to apply my classroom learning to the workplace. |  | .411 |  |
| q16 Teachers expected me to work up to my potential and challenged me to do my best. |  |  | .410 |
| q17 School has prepared me with the skills I will need in college and/or the workplace. | .439 | .456 | .422 |
| q23 My high school education provided me with the following skills to help me succeed: Reading, writing, math skills. | .405 |  |  |
| q25 How to get along with others. | .476 | .479 | .488 |
| q26 The importance of good attendance and being on time. | .487 | .469 | .498 |
| q27 How to communicate effectively. | .456 | .460 | .470 |

The relationships across q17 and q24 are important because these

relationships tie together student perceptions of hard skills (q17) and soft skills

(q24) relative to access to the workplace and/or career planning and to adult

support.  The correlations between q17 and q11, q12, q13, q16, and q24 are above

.400 for all three years.  These results strongly suggest that students who believed

that school prepared them with skills for college and/or work (q17) also believed

that they had opportunities to apply classroom learning to real life situations (q11) and the workplace (q12). These responses were supported by strong and consistent scores in making post-high school plans (q13), working up to their potential (q16), and working effectively and managing their time (q24).

The high correlations observed in q24 were consistent across all three years of data when compared with q17, q25, q26, and q27. Students who believed that school prepared them to work effectively and manage their time well (q24) also believed that school prepared them with the skills they needed for college and/or the workplace (q17), and helped them to get along with others (q25). They also felt that they learned the importance of attendance and punctuality (q26), and effective communication (q27). Inconsistent correlations across the years appeared in the comparison of q24 with q12, q16, and q23. Question 24 asked students if they felt that they had learned how to work effectively and manage their time. In 2006, students who felt that they could work effectively and manage their time well (q24) also had opportunities to apply their classroom learning to the workplace (q12). In 2007, students who felt that they could work effectively and manage their time well (q24) felt that teachers challenged them and expected them to work up to their potential (q16). In 2005, students who felt that they could work effectively and manage their time well (q24) felt that they were prepared to succeed through their reading, writing, and math skills (q23). The gaps in responses to q24 across the years could suggest that students do not consistently have the opportunity to apply their learning to the workplace (q12), do not feel that

their teachers always have high expectations of their performance (q16), and have

not been confident in their preparation in reading, writing, and math since 2005.

These outcomes are not conclusive, but the relationship between academic

performance, relevancy (opportunities to apply learning), and the support of

teachers warrants further investigation.

Table 4.4 shows correlation responses above .400 that were inconsistent

across the three years of data.  Two sets of high correlations stand out as

exceptions.  These correlations appeared in the relationships between q11 and q12,

and between q25 and q27.  Questions 11 and 12 received values of .623 in 2005,

.658 in 2006, and .645 in 2007.  Students who felt that school provided

opportunities for real life applications of learning (q11) also felt that school had

offered them the opportunity to apply their classroom learning to the workplace

(q12).  Questions 25 and 27 were correlated at .569 in 2005, .574 in 2006, and .570

in 2007.  Students who felt they had learned how to communicate effectively (q27)

also felt they had learned how to get along with others (q25).

Table 4.4. Additional Positive Correlations Across 2005, 2006, and 2007

| **Q11**  School offered me the opportunity to apply my classroom learning to real life situations. | 2005 | 2006 | 2007 |
|---|---|---|---|
| q12 School offered me the opportunity to apply my classroom learning to the workplace. | .623 | .658 | .645 |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | .411 | .406 | .402 |
| q15 School counselors and/or teachers assisted me in exploring possible career opportunities. | | | .413 |
| q17 School has prepared me with the skills I will need in college and/or the workplace. | .492 | .484 | .483 |
| q22 School provided me with the opportunity to participate in job shadows and/or internships. | | .401 | |
| | | | |
| **q12** School offered me the opportunity to apply my classroom learning to the workplace. | | | |
| q11 School offered me the opportunity to apply my classroom learning to real life situations. | .623 | .658 | .645 |
| q17 School has prepared me with the skills I will need in college and/or the workplace. | .445 | .447 | .423 |
| q22 School provided me with the opportunity to participate in job shadows and/or internships. | | .400 | |
| q24 How to work effectively and manage my time well. | | .411 | |
| q28 How to write a resume and practice interview skills. | .413 | .431 | |
| | | | |
| **q22** School provided me with the opportunity to participate in job shadows and/or internships. | | | |
| q11 School offered me the opportunity to apply my classroom learning to real life situations. | | .401 | |
| q12 School offered me the opportunity to apply my classroom learning to the workplace. | | .400 | |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | | .405 | |
| q28 How to write a resume and practice interview skills. | .416 | .435 | .406 |
| | | | |
| **q27** How to communicate effectively. | | | |
| q24 How to work effectively and manage my time well. | .456 | .460 | .470 |
| q25 How to get along with others. | .569 | .574 | .570 |
| q26 The importance of good attendance and being on time. | .451 | .461 | .470 |
| q28 How to write a resume and practice interview skills. | | | .402 |
| | | | |
| **q28** How to write a resume and practice interview skills. | | | |
| q12 School offered me the opportunity to apply my classroom learning to the workplace. | .413 | .431 | |
| q22 School provided me with the opportunity to participate in job shadows and/or internships | .416 | .435 | .406 |
| q24 How to work effectively and manage my time well. | | .419 | |
| q26 The importance of good attendance and being on time. | | .401 | |
| q27 How to communicate effectively. | | | .402 |

The remaining responses displayed in Table 4.4 fell between .400 and .500. Seven questions received consistently high marks across the three years. The relationship between q11, q13, and q17 suggests that students who were able to apply their classroom learning to real life situations (q11) had also learned to access resources to support their post-high school plans (q13) and felt prepared with the skills needed for college and/or the workplace (q17). Questions 12 and 17 reflected that students who had opportunities to apply their classroom learning to the workplace (q12) also felt prepared with the skills needed for college and/or work (q17). Questions 22 and 28 connected opportunities to participate in job shadows and internships (q22) with writing a resume and interviewing skills (q28). Questions 27, 24 and 26 showed the relationship between good communication (q27), working effectively and managing their time (q24), and the importance of good attendance and timeliness (q26).

As with Table 4.3, the remaining scores for Table 4.4 were inconsistent across the years. In this case, the occurrences of one or two high scores suggest that students are experiencing or perceiving differences in their school experiences across the three years of data. Question 11 (opportunity to apply classroom learning to real life situations) correlates high with q15 (assistance with exploring career opportunities) in 2007 and q22 (job shadowing and internships) in 2006. Question 12 (opportunity to apply classroom learning to the workplace) correlates high with q22 (job shadowing and internships) and q24 (how to work effectively and manage my time well) only in 2006. Further data in Table 4.4 suggest that job

shadowing and internships were only available or accessible to students in 2006.

It should be noted that the survey does not distinguish between experience and

perception, but the data do show concentrations of responses that suggest

inconsistent opportunities for students.

Question 27 (how to communicate effectively) demonstrates concentrations

of responses around soft skills: q24 (how to work effectively and manage my time

well), q25 (how to get along with others), and q26 (the importance of good

attendance and being on time). However, q27 (how to communicate effectively)

and q28 (how to write a resume and practice interview skills) are only connected

with a strong response in 2007. Note also that q28 (how to write a resume and

practice interview skills) correlates highly with q24 (how to work effectively and

manage my time well) and q26 (the importance of good attendance and being on

time) only in 2006.

*Inferential Analysis: (M)Anova*

The data were then subjected to a full factor (M)Anova to assess the impact

of post-high school plans, ethnicity, and gender on Factor 1 and Factor 2. The

resulting f-score associated with gender showed no relationship between gender

and the responses in either of the two factors. Post-secondary plans were indicated

by survey items 1-6. The six options included four-year college/university,

community college, technical trade school, work, military, and no plans. A good

amount of the variance in the data could be attributed to items 1-6. The f-score for

these items is 3.46, and the significance is .000148, which is replicable. However, the statistics determined that these findings only explain 1% of the variance. The f-score for ethnicity is 7.29, and the significance is 1.07E. While both of these outcomes are statistically significant, they are not useful because, again, they only represent 1% of the variance. Combining items (gender + post-secondary plans; gender + ethnicity; post-secondary plans + ethnicity; gender + post-secondary plans + ethnicity) revealed no significance. Ethnicity is the only element that could predict the outcomes of Factor 1 and Factor 2.

Taking this analysis a step further, the mean responses to questions 11-28 were tallied by ethnicity for all three years. The ethnic groups identified by the survey were American Indian, African American, Hispanic American, White, Asian American, and Mixed Race/Other. Statistically, responses by ethnicity showed little variance, though some interesting groupings appeared in the data. Every ethnic group agreed at the 3.20 level and above that school provided them with reading, writing, and math skills (q23). African American and Hispanic students consistently agreed across three years that they should have worked harder in school (q14). African American and Hispanic students also agreed across three years that teachers expected them to work to their potential (q16). White students most strongly disagreed that school should have required more homework (q20). The responses to q14 and q16 suggest a discrepancy between teacher expectations (q16) and the potential of African American and Hispanic youth to perform at school (q14). It is also interesting that white students are the

strongest voice in not wanting more homework. Although these findings raise some issues that suggest the need for further investigation, the current data do not provide the depth of information needed to lead to conclusive statements about ethnicity.

*A Comparison of Noncollege-bound and College-bound Students*

As noted in the initial assessment of the survey data, the distribution of responses does not reflect existing research that says 55% of high school graduates do not enter college after high school (Adelman, 1993; Wenrich, 1996). The survey omitted qualifying questions that asked students if they had applied to college or had been accepted into college. As a result, the self-reported responses are not necessarily accurate in reflecting students' future plans. However, additional data provided by PPS (2007) and Achieve, Inc. (2008) support the Adelman and Wenrich findings that the majority of high school graduates nationwide do not enter, or do not complete college after high school.

In spite of this concern about the accuracy of post-high school plans in the PPS senior survey data, the mean responses of noncollege-bound and college-bound students were compared across questions 11-28 to ensure that the assessment of the data was thorough. The mean responses for each of the six post-high school options were compared in several scenarios. Factor 1 and Factor 2, groupings that emerged in the Principal Component Analysis, were examined first.

No outstanding qualities emerged for these factors. The data were then examined for significantly high and low mean scores. Three items emerged:

1. All of the mean scores for q13 (learned to access resources to help with post-high school plans) leaned toward agreement with the question. Responses were highest across three years for students entering 4-year colleges, and in years 2006 and 2007 for 2-year college-bound students. The largest variance in responses was .38, between students entering a 4-year college and no plans in 2005. The next notable variance was .37 in 2007, between students entering a 4-year college and students entering the military.

2. The highest responses to q14 (should have worked harder in school) clustered around 2-year college, technical school, and work in 2005; 2-year college, work, and military in 2006; and 2-year college, technical school, work, and military in 2007. The mean response for students entering the military was significantly higher in 2007, at 3.56, and was .28 points greater than its nearest contender. If student responses to the survey more precisely reflected their future plans, these findings that reflect the performance of students entering the military would be significant.

3. Students who planned to enter the military consistently agreed that high schools did not prepare them with soft skills: q24 (how to work

effectively and manage my time well), q25 (how to get along with

others), q26 (the importance of good attendance), q27 (how to

communicate effectively).  The low scores from the military group

were particularly notable in years 2005 and 2007.  Again, if the survey

data provided a more precise representation of students' future plans,

the responses of students entering to the military toward soft skills

preparation would be significant.  The responses are summarized in

Table 4.5.  (See Appendix D for the complete data table.)

Table 4.5.  Highlights of a Comparison of Noncollege-Bound and College-Bound
High School Graduates

| | 2005 | | | | | |
|---|---|---|---|---|---|---|
| | 4-yr | 2-yr | Tech | Work | Military | No Plans |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | 3.08 | 2.99 | 2.92 | 2.84 | 2.82 | 2.70 |
| q14 I should have worked harder on schoolwork while I was in school. | 2.69 | 3.19 | 3.21 | 3.17 | 3.1 | 2.99 |
| q24 How to work effectively and manage my time well. | 2.76 | 2.75 | 2.81 | 2.78 | 2.45 | 2.69 |
| q25 How to get along with others. | 2.93 | 2.90 | 2.96 | 2.83 | 2.47 | 2.82 |
| q26 The importance of good attendance and being on time. | 2.71 | 2.94 | 3.00 | 2.96 | 2.48 | 2.86 |
| q27 How to communicate effectively. | 2.94 | 2.95 | 2.87 | 2.85 | 2.43 | 2.80 |
| q28 How to write a resume and practice interview skills. | 2.30 | 2.61 | 2.55 | 2.49 | 2.32 | 2.48 |
| | 2006 | | | | | |
| | 4-yr | 2-yr | Tech | Work | Military | No Plans |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | 3.06 | 3.01 | 2.94 | 2.81 | 2.92 | 2.95 |
| q14 I should have worked harder on schoolwork while I was in school. | 2.75 | 3.15 | 3.01 | 3.12 | 3.13 | 3.06 |
| q24 How to work effectively and manage my time well. | 2.78 | 2.88 | 2.82 | 2.81 | 2.60 | 2.80 |
| q25 How to get along with others. | 2.99 | 2.95 | 2.93 | 2.90 | 2.83 | 2.81 |
| q26 The importance of good attendance and being on time. | 2.73 | 2.95 | 2.88 | 2.81 | 2.76 | 2.94 |
| q27 How to communicate effectively. | 3.03 | 2.95 | 2.86 | 2.87 | 2.74 | 3.00 |
| q28 How to write a resume and practice interview skills. | 2.33 | 2.65 | 2.41 | 2.44 | 2.55 | 2.54 |

| | 2007 | | | | | |
|---|---|---|---|---|---|---|
| | 4-yr | 2-yr | Tech | Work | Military | No Plans |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | 3.07 | 3.04 | 2.82 | 2.92 | 2.70 | 2.80 |
| q14 I should have worked harder on schoolwork while I was in school. | 2.76 | 3.28 | 3.26 | 3.21 | 3.56 | 3.11 |
| q24 How to work effectively and manage my time well. | 2.76 | 2.82 | 2.68 | 2.65 | 2.50 | 2.69 |
| q25 How to get along with others. | 2.99 | 2.91 | 2.88 | 2.90 | 2.50 | 2.86 |
| q26 The importance of good attendance and being on time. | 2.75 | 2.98 | 2.81 | 2.79 | 2.83 | 2.80 |
| q27 How to communicate effectively. | 2.99 | 2.98 | 2.89 | 2.89 | 2.68 | 2.85 |
| q28 How to write a resume and practice interview skills. | 2.32 | 2.63 | 2.64 | 2.53 | 2.95 | 2.57 |

The PPS Research, Evaluation, and Assessment Department (Portland Public Schools) provided a 2007 report that adds support to the Adelman (1993) and Weinrich (1996) workforce participation data. The school district contracts with the National Student Clearinghouse, which collects data from 91% of colleges in the United States. PPS secures data regarding seniors who attended college immediately following high school graduation. The data covered seven years and is summarized in Table 4.6.

Table 4.6.  Summary of Estimated Graduation Rates for PPS High School
Graduates Entering 4-Year and 2-Year Colleges in the Year Following High
School Graduation:  Based on June 2007 data from National Student
Clearinghouse.

| Graduation Year | High School Graduates | Graduates Entering a 4-Year College in the Year Following High School Graduation | Total Earned Bachelor's Degrees |
|---|---|---|---|
| 1999-2000 | 2,698 | 907 | 681 |
| 2000-2001 | 2,802 | 1,006 | 644 |
| 2001-2002 | 2,854 | 1,048 | 515 |
| 2002-2003 | 2,779 | 1,056 | 86 |
| 2003-2004 | 2,623 | 1,097 | 1 |
| 2004-2005 | 2,547 | 984 | |
| 2005-2006 | 2,678 | 1,056 | |
| **TOTALS** | **18,981** | **7,135** | **1,927** |
| Graduation Year | High School Graduates | Graduates Entering a 2-Year College in the Year Following High School Graduation | Earned Associate's Degree |
| 1999-2000 | 2,698 | 598 | 100 |
| 2000-2001 | 2,802 | 725 | 82 |
| 2001-2002 | 2,854 | 679 | 60 |
| 2002-2003 | 2,779 | 703 | 53 |
| 2003-2004 | 2,623 | 626 | 12 |
| 2004-2005 | 2,547 | 601 | 1 |
| 2005-2006 | 2,678 | 625 | 2 |
| **TOTALS** | **18,981** | **4,557** | **310** |

Out of 18,981 high school graduates during the seven-year time period

from 1999-2006, 7,135 students (38%) entered a 4-year college in the year

following high school graduation.  An additional 4,557 students (24%) entered a 2-

year college immediately following high school graduation.  The total percentage

of PPS students entering college after high school during this time was 62%.  The

report also included degrees earned and reported that 1,927 students earned

Bachelor's degrees between 2000 and 2004, and 310 students earned Associate's

degrees between 2000 and 2006.  A closer examination of degrees earned showed

that considerably more than half of the students who enrolled in college after high school graduation did not complete college in the expected time. Table 4.6 shows that, of the 907 high school graduates entering a 4-year college in Fall 2000, only one of them graduated from college in 2004. Similarly, of the 598 high school graduates entering a 2-year college in fall 2000, 60 of them earned an Associate's Degree by 2002. Historical data (Achieve, Inc., 2008; Adelman, 1993; Portland Public Schools, 2007; Weinrich, 1996) show that the majority of high school graduates across the country do not enter college after high school. Although the PPS data represented in Table 4.6 does not follow historical trends, it does demonstrate that PPS graduates who do enroll in college are struggling to complete college. It could be argued that the high numbers of PPS graduates who do not complete college bring the totals closer to the national averages of students not continuing higher education after high school. It should also be noted that the data in Table 4.6 do not distinguish between students who enter the military, enroll in a technical school, or enter the workforce after high school.

*Worker Interview Findings*

The second element of this mixed methods study is the qualitative component. Six adult workers were interviewed and their responses were assessed using grounded theory procedures.

*Grounded Theory Data Analysis*

Grounded theory refers to a theory that has developed inductively through a specific process of analyzing a group of data (Strauss & Corbin, 1998; Borgatti, 2004). Grounded theory takes a case-oriented approach, which assumes that the variables interact in complex ways. Borgatti has stated that each case is examined for similarities and differences through a series of steps that, when carefully executed, "guarantee" a good theory as the outcome, and that theory fits at least one dataset perfectly (p. 1). The application of the four-step analysis (initial coding, axial coding, selective coding, and memo writing) is described in the context of the interview data.

*Initial Coding*

Initial coding is the first step in grounded theory analysis. The initial coding of the transcripts is accomplished by reviewing each line of the text to identify the major ideas in the passages and by making note of the ideas in the margin adjacent to the text (Strauss & Corbin, 1998). The main ideas are sorted into natural groupings during the axial coding process.

*Axial Coding: Coding Paradigm*

Axial coding is the second step in the analysis. It is defined by a coding paradigm that identifies the components of the study. The coding paradigm emerges from the analysis of the data gathered in the initial coding process.

The five parts of the coding paradigm for this data set are: 1) the central phenomenon that generally describes the data set, 2) the causal conditions that influence the phenomenon, 3) the skills or traits identified by the participants as personal qualities that impact their work, 4) the context and intervening conditions that influenced the decisions made by the participants and led to a positive work experience, and 5) the outcomes or recommendations that are based in personal experience (Strauss & Corbin, 1998).

Following the initial coding process, the major ideas in each passage are classified or grouped by each category of the coding paradigm. This information becomes the basis for the selective coding, the next step in the grounded theory process. The results of the axial coding are displayed in Table 4.7.

Table 4.7.  Axial Coding of Interview Data

| Participants | Central Phenomenon that led to a productive work experience | Causal Conditions leading to workforce over college | Self-identified Skills/Traits | Context & Intervening Conditions Leading to Positive Work Experiences |
|---|---|---|---|---|
| 1 | Adult influence – mother, teacher. Problem-solver. | Stopped caring due to dad's illness. Lack of motivation. | People skills. Problem-solving. Common sense. Efficient. Multi-tasker. Keeps to a timeline. | Active in high school. Push myself. |
| | QUOTE:  To really ever start making any more money and have a real cool stable career, you kind of need that (college) degree.  It really kind of sucks to look at it that way.  I mean I really feel that I've got the knowledge to go on and do things that I want to do and I feel like I've learned from lots of people and, to me, it really kinda feels like a piece of paper. | | | |
| 2 | Initiative. Self-disciplined. Adult influence – teacher. | No money for college – not exposed to other options to pay for college. Terrible tester. No parent support. Acts first, asks questions later. Perfectionism interferes with studying. | Diligent. Efficient. Organized. Handle the unexpected. Willing to learn. Quick study. Able to compromise. | Grew up on a farm. Expected to take responsibility. Self-disciplined. School was an escape from farm work. Work ethic from home. |
| | QUOTE:  My kids are going to college even if I have to work four jobs. | | | |
| 3 | Adult influence – teacher Work ethic Takes pride in work. Integrity. | Tech high school geared toward work. Wanted to make money and party. Tired of school. Undisciplined student. Parents didn't push me to study. Passed up GI bill for college and regrets it. | Reliability. Attention to detail. Work ethic: put in needed hours, work with others, cooperate, be responsive, be accessible. Honesty. Integrity. Pride in work. Organization. | Teacher influence: integrity of the work, recognized & nurtured qualities in students, taught work ethic. |
| | QUOTE:  The better you have your house in order on the personal side, the better you're going to be in the workforce, and that's something that I think that I wasn't as prepared for as I should have been. | | | |

| 4 | Resourceful. Positive attitude. Problem-solver. | Should have done what I wanted – not happy with choices. | Needed 1-on-1 attention from adults, access to teachers. Felt overwhelmed, not directed. Need relevant classes. | Positive attitude. Listening. Problem-solving. Meet customer needs by providing choices. Resourceful. Well-spoken. Written communication. |
|---|---|---|---|---|
| | QUOTE: I felt like I was a number. I felt like I was one of the million kids and the teachers could have cared less whether I was there or not. . . . I should have really thought what I wanted to do and done it because in the end, if you're not happy, it doesn't really matter. | | | |
| 5 | Resourcefulness. Necessity forced him to figure out how to be a good worker. Determined. Seeks to understand customer & market. | Stubbornness & rebellious attitude interfered with youthful decisions. Never pictured himself as having a job that needed college. Father died when he was 7 & mom worked graveyard –not available. Passed up apprenticeship offered at 16 because he couldn't accept the 5 year commitment. Dropped out of high school. | Willingness to understand customers & supply product. Pays attention. Understands importance of providing quality product. Customer service. Solves problems quickly. Self-determination. | Nearly homeless – committed to figuring it out. Horticulture class, shop were relevant but didn't see value of other classes. Paid attention to what worked for other people. Asks questions, seeks opportunities. |
| | QUOTE: The first company I owned I hired a lot of people that worked for me were kind of in the same boat as I was. They had either dropped out of high school or had finished high school; had no aspirations for going to college. And it was really kind of painful to watch because they made a lot of mistakes with their lives that were the kind of mistakes that maybe some basic knowledge would have helped. Things like trying to buy a car and being taken advantage of by unscrupulous car dealers or financers because they didn't understand the value of money and how things worked. | | | |

| 6 | Both parents owned business. Mother was very entrepreneurial, always looking for businesses. Drive. Determination. Hard working. | Was working in her intended college career choice right after high school and making more money than she would have after college. Saw little connection between school and work. Didn't like the routines in school. A job is just like school; routine is security. She works for herself so she can control her schedule. | Drive. Determination. Self-motivated. People skills – ability to build rapport, trust with clients. Hard working – if you do what others won't, you're gonna have what others don't. | Had job in high school. Bought a company at 22. Wanted to be my own boss. |
| --- | --- | --- | --- | --- |
| | QUOTE: We have a lot of people here (at work) that go to college and I mean the thing is that they've been in school for the last 8-9 years of their life, they have no skills, no people skills. I mean it's amazing. It's like all they know is how to study and read a book and take a test. It's hard for them to get a job . . . I did a lot of hiring and interviewing (before this job) and I always looked for people who had experience more than I looked for people that had education. Because I knew that I wouldn't have to put in as much time into them because you can get somebody that's fresh out of college that's harder to train. They have no real life skills. They took a calculus course. Well, what business are you going to be in right out of college that's going to need that right away? Very few. . . I've worked right next to people that have bachelor's degrees that I make more than they do. And probably a lot of that is that I have drive and determination. I think that's something that you're born with or you're not. I think that's something you can't learn. | | | |

| Participants | Outcomes & Recommendations | |
| --- | --- | --- |
| | Traits shared by influential adults | What should schools do differently? |
| 1 | Teacher, mom: Focused on self. Invested lots of time. Cared. Cracked down. Showed interest. | Build community. Build relationships with adults who show interest. Help kids learn to deal with people. |
| 2 | Teacher, boss: Organization. How they interacted with kids. Loved her job and showed it. | Experiencing life is good for kids. Lay the groundwork for your kids at home. Provide organized mentor programs. Find out about family structure and offer support. |

| | | |
|---|---|---|
| 3 | Boss:<br>Taught by example.<br>Work ethic.<br>Integrity.<br>Patience.<br>Respect. | Teach more about work ethic: integrity, showing up for work, not complaining, being aware of surroundings, being conscientious.<br>Teach general life skills: how to manage money, being a responsible citizen, renter… |
| 4 | (no influential adults) | Career days.<br>Parent/counselor planning.<br>Expose kids to options.<br>Bring in speakers to talk about the workplace.<br>Offer relevant coursework. |
| 5 | They paid attention to me. | Teach life skills, how to get a job.<br>Help kids maintain their individuality and still be a part of a group.<br>Pay attention to different learning styles.<br>Ask why students who are smart aren't making it instead of tossing them aside.<br>Be concerned with what kids are learning, not just that they conform and put their time in.<br>Provide people to mentor, have straight talks with kids about what they want to do and what they need to do to get there. |

| | | |
|---|---|---|
| 6 | Industrial.<br>Entrepreneurial.<br>Work ethic – hard working, loyal. | Make school relevant to jobs – a little writing, reading, math required.<br>Real world training – managing personal finances, develop projects that teach responsibility: paying bills, saving money, teach kids how to live.<br>Teach kids to do the work before it's due.<br>Develop people skills, communication, money management, how to sell yourself.<br>Change the routines. Design enrichment programs that allow kids to interact with kids who have the same interests and build people skills.<br>Require 1 semester of managing: finances, debt and credit management, how credit cards work. |

*Selective Coding and Memo Writing*

In selective coding, each interview transcript is reviewed again, this time looking for conceptual ideas (see Table 4.8). The researcher then constructs a memo for each transcript that synthesizes the findings of this process (Strauss & Corbin, 1998*).* Repeating the four-step process with each interview can lead to the beginnings of a theory that is grounded in the interview data.

Table 4.8. Selective Coding and Memos of Interview Data

| | Selective Coding: Synthesizing Categories | Memos |
|---|---|---|
| 1 | Unfocused. Lack of motivation. Getting along with people Inherent traits – efficient, multi-tasker, problem-solving. Being involved in HS. Get parents involved. Caring adults that show interest. Feels like college is a must to get ahead but now it feels rewarding. | Subject 1 did not attend college in spite of being accepted to the University of Portland. Her father developed Huntington's Disease when she was in early high school, and she became so worried about getting it herself that she stopped caring about school. She took a deferment to college, got a job as an educational assistant with the PPS Summer Scholars program and never looked back. She repeatedly talks about learning to deal with people. She also talks about the people in her life who took an interest and gave her honest feedback. She feels strongly that the traits that she uses most at work (efficient, multi-tasker, problem-solving) are inherent traits from her mother. The learned skill is getting along with people. She believes that, because kids lose contact with their parents in high school and pull away, schools should focus on building community and getting the parents involved. A teacher who focused on her invested lots of time and demonstrated that she cared by cracking down. She is taking a few college courses now because she believes that she has to in order to make the money that she wants to make. She says that "it sucks" to have to go because she feels that she has the knowledge to do the things she wants to do and the diploma "kind of feels like a piece of paper." |
| 2 | No money for college. No parent support. Terrible tester. Perfectionist. Traits: Diligent. Efficient. Organized. Handle the unexpected. Willing to learn. Quick study. Able to compromise. Does things first, then will ask how later. Perfectionism interferes with studying. | Subject 2 is very focused. She targets what she wants and goes after it. She owns a car and a house, is raising two kids as a single parent, and is doing that by working three hourly wage jobs. She repeatedly talks about being organized and being able to quickly respond to the unexpected. She was strongly influenced by her $6^{th}$ grade teacher who provided a teacher aid opportunity in a $1^{st}$ grade. She became hooked on working with young kids. When the children in her family reached high school age, her parents kept the kids home to work on the farm. They ordered mass amounts of home-school books, but the kids were left up to themselves to figure it out. If they failed, they had to pay their dad $6,000 because that's what the program cost per student. Her dad did not think college was necessary, "so you had to pay for college yourself if you wanted to go." She believes that just experiencing life is important for kids, and that school is part of that life experience. She strongly feels that kids need mentors, and that schools should take the time to find out about children's family supports, and provide structure for students who need it. |
| 3 | Work ethic (reliability, attention to detail, do whatever it takes, be responsive, cooperate, be accessible). Honesty. Integrity. Patience. | Subject 3 was influenced by a teacher who recognized qualities in people and nurtured those qualities. He comes from a family of readers. He enjoyed learning, but making money and partying were more important when he graduated from high school. He believes that all the classes he took in high school were useful, though "you don't know you're using it sometimes when you're applying it in the world of work." He had access to the GI Bill because his father died in the service. He chose not |

| | | |
|---|---|---|
| | Big reader.<br>Poor study habits, not a disciplined student, last minute studying.<br>Parents not after him to study.<br>Adult mentors showed patience, respect, integrity. | to go to college and believes that he "totally made the wrong decision." He had a boss who taught by example and emphasized work ethic, integrity, and skills. Subject 3 recommends that schools teach students more about work ethic (integrity, being conscientious), and about general life skills like managing your finances and being a responsible citizen. |
| 4 | Willingness to go the extra mile.<br>Positive problem-solving with customers.<br>Resourceful.<br>Communication skills.<br>Felt like no one cared whether or not she was in school – no chance to access teachers, no direction.<br>Educate students about work. | Subject 4 felt invisible in high school because she felt there were too many students and so few teachers. She was frustrated at not finding a way to connect with teachers. She did not feel directed in high school. She believes that she should have done what she wanted to after high school (teacher, designer, artist) because "if you're not happy, it doesn't really matter." She strongly believes that schools need to educate students about the workplace (career days, parent/counselor planning, expose kids to their options, bring in speakers to talk about the workplace). Subject 4 attended both public and private high school. She stated that her private school experience was focused on hands-on individual instruction with electives. The teachers wanted to be there. In public school, the teachers were burned out and overwhelmed. She couldn't access teachers because there were not enough of them. Homework was busy work that took the focus away from learning, and the classes were boring and irrelevant. Subject 4 presents herself today as someone who is alone with no support and is doing the best she can. |
| 5 | Survival instinct.<br>Self-determination.<br>Is observant and asks questions.<br>Looks for opportunities.<br>Takes risks.<br>Solves problems quickly.<br>Pays attention to customer needs and wants.<br>Could not imagine himself with a job that required college.<br>Lacked discipline at home.<br>Needed an adult to be straight with him about his choices.<br>Help kids think into the future. | Subject 5 experienced a push to conform and put in his time in high school rather than to show that he learned. He believes strongly that schools need to help students maintain their individuality while supporting their success. Schools can't be one size fits all. Schools need take away the stigma that going to college is bad. Instead, schools should provide the life skills that students will need to be OK in the workplace and living on their own. Schools should be asking why students aren't making it instead of saying we're done with you. Schools should be looking at why kids who are successful on tests aren't making it in the classroom, demonstrate the relevance of courses like English and math and help kids picture themselves in the future. In the first company he owned, he hired high school kids who were like him, dropouts or not college-bound. He observed that the ones who were successful had influential adults in their lives who provided checks and balances. As an adult, he associates himself with people who have high standards, ethics, and values because they lift him up. |

| 6 | Did not see relevance in high school classes. Bored with school routines. Didn't put in the effort that she could have. Drive. Determination. Self-motivation. Common sense. People skills to build rapport and trust with clients. Works for herself so that she can control her schedule. Strong work ethic. Hard worker. Does the work before it's due. | Subject 6 worked in her chosen field (fashion merchandising) right after high school and was making more money than she would have if she had finished college. She saw no point in college. She sees very little connection between school and workplace success. She didn't like the routines of school. She believes that students need real world skills like balancing a check book, learning how loans and credit cards work, how to communicate, how to sell yourself. Her own children question why they have to take Algebra and she is hard pressed to defend it because both she and her husband are successful without college. She believes that many jobs should not require a BA. Many of her college-educated peers at work have no people skills. As a manager and business owner, she hired for experience because she found the college educated people often needed more training than people with work experience. She believes that schools should provide opportunities for kids to interact with other kids with the same interests and focus on building people skills. Schools should also require a half-year of financial management. |
|---|---|---|

The two categories that emerged from selective coding were (1) self-identified high school traits that reflected the participants' high school experiences, and (2) self-identified traits that led to productive workforce experiences for the participants. These categories were determined by grouping like-responses together.

The two groupings in Table 4.9 that emerged from the selective coding and memo writing process appear to contradict each other. The interview participants generally described themselves in high school as undisciplined students who could not see the relevance of high school classes and could not envision their futures after high school. Four of the six felt that they had no parental influence to support their success at school. Half of the respondents described adult mentors within the school setting, and the other half expressed the need for adult mentors in school.

Table 4.9.  Categories that Resulted from Selective Coding

| Self-Identified High School Traits | Self-identified Workplace Traits |
|---|---|
| Not a disciplined/motivated student (5). | Self-motivation (6). |
| Could not envision their future (5). | Willingness to do whatever it takes (5). |
| Did not see relevance in high school classes (4). | Communication skills (5). |
| No parent support to be successful at school (4). | Strong work ethic [integrity, reliability, attention to detail, diligent, responsive, cooperative, accessible] (5). |
| Adult mentors at school showed patience, respect, integrity (3). | Resourceful/Problem-solver (4). |
| Needed an adult mentor in school (3). | |

In contrast, the participants described themselves in the workplace as self-motivated and willing to do whatever it took to get the work done.  They considered themselves to have strong communication skills and to be resourceful problem-solvers on the job.  Five of six referred to their strong work ethic.  A compilation of their descriptions of work ethic included integrity, reliability, attention to detail, diligence, responsiveness, cooperativeness, and being accessible to customers and employees.  The contradictions in the participants' descriptions of themselves in high school and at work raise two big questions:  If these participants recognized these characteristics in themselves in school, why would they choose not to apply those traits to school?  What influences led to the emergence of these characteristics in the workplace?

*The Emerging Theory*

The analytical process that defines grounded theory can result in a new theory emerging from the data.  In speculative theory, the theory is the starting point for the research, and choices around data analysis are driven by the initial theory.  In grounded theory, an explanation of the data (a theory) is derived from, or grounded in, the analysis process (Charmaz, 2001; Strauss & Corbin, 1998). The initial coding was a line-by-line analysis that identified the major ideas in each transcript.  Axial coding organized those major ideas into categories that began to define the data (Table 4.7).  These categories are:

- Central phenomenon that led to a productive work experience.

- Causal conditions leading to choosing work over college.

- Self-identified skills and traits.

- Context and intervening conditions leading to positive work experiences.

- Outcomes and recommendations:

    o Traits shared by influential adults.

    o What should schools do differently?

The analysis of the transcripts also uncovered quotes that were unique to each participant.  (These quotes are included in Table 4.7.) Selective coding further synthesized the data by reviewing each transcript again, this time looking for conceptual ideas.  These ideas are grouped by participant in Table 4.8, and are accompanied by memos that reflect on the findings and further refine the data.

Table 4.9 concentrates the participants' responses into self-identified traits that define their high school and workplace experiences.  A second analysis of the data grouped the responses into categories that have been labeled with questions in Table 4.10:  What interfered with having a productive high school experience? What should schools do differently to support students entering the workplace directly after high school?  What adults influenced the lives of the interview participants?

Table 4.10.  Overview of Memo Analysis

| | What interfered with having a productive high school experience? | What schools should do differently? | Adult influence? |
|---|---|---|---|
| 1 | Father's illness.<br>Lost motivation. | Build community.<br>Get parents involved in school.<br>Lost sight of importance of school work. | Mother.<br>Teacher. |
| 2 | Required to work on the farm so she had to home school herself to get a high school diploma. | Provide adult mentors.<br>Provide structure. | Father.<br>Teacher. |
| 3 | Father died.<br>No direction. | Teach about work ethic.<br>Teach general life skills like managing finances and being a responsible citizen. | Teacher.<br>Boss. |
| 4 | No adult connections in school.<br>No direction. | Teach about the workplace.<br>Make teachers accessible to students.<br>Support teachers so they want to be at school.<br>Make coursework relevant. | |
| 5 | Father died.<br>Resisted school's expectation to conform.<br>Mother worked too much to focus on school. | Help students maintain their individuality.<br>Teach life skills.<br>Look for solutions to help students be successful instead of dismissing them.<br>Demonstrate relevance of coursework.<br>Help kids picture themselves in the future.<br>Provide adult mentors. | |
| 6 | Didn't like the routines of school.<br>Not a motivated student. | Relevant classes.<br>Real world skills.<br>Develop people skills.<br>Teach financial management. | Parents. |

*Mixed Methods Summary:  Three Core Findings*

The three core findings that emerged from the data were (1) the importance of soft skills to productive high school and workplace experiences, (2) an absence of significant adult relationships in the high school setting, and (3) the lack of relevancy of high school coursework.  These findings are supported by both survey and interview results.

*Survey Results.*  Survey questions 11-28 grouped into the following three categories:  1) hard skill acquisition, 2) soft skill acquisition, and 3) adult support. Three major elements emerged from the results that describe the relationships across the three categories.  The first element is that a high correlation across three years was found between students who felt prepared for college and/or work (q17), and those who had opportunities to apply their learning to real life situations (q11), had access to the workplace (q12) and learned how to access resources (q13). Responses by students who felt prepared for school and/or work (q17) also correlated strongly across three years with question 24 (how to work effectively and manage my time well).  The second element that emerged is that questions that described opportunities for students to apply their learning to real life situations (q11), including the workplace (q12) and learning how to access resources (q13), grouped separately from the questions that described soft skills (q25, q26, and q27).  The exception is question 24 which correlated across the three years with

both of the major positive correlation clusters (Table 4.3). The third element is that only two of the survey questions referred to adult influence: question 16 (teachers expected me to work up to my potential and challenged me to do my best), and question 21 (the adults in my school care about me and treat me with respect). Question 16 had a strong correlation only with question 17, school has prepared me with the skills I will need in college and/or the workplace.

*Interview Results.* Three important elements emerged from the interview data as well. The first was that the self-described traits (self-motivation, willingness to do whatever it takes, communication skills, strong work ethic, resourceful/problem solver) that led to productive workplace experiences for the participants were not present, or were not applied, when these people were in high school. The second element was that five of the six participants believed that adult influence and support were missing from their high school experiences. These participants believed that adults would have made a difference in their performance and participation in school. The third element was that four of the six participants did not see the relevance of high school course work. They believed that examples of real life applications of academic content would have influenced their performance as students.

*Side-by-side Comparison of Data*

*The Importance of Soft Skills to Productive High School and Workplace Experiences*

Side-by-side comparisons of the data show that high school students view, and perhaps experience, soft skills and hard skills as separate entities. Hard skills identified by the survey data include real life and workplace applications (q11, q12), and access to resources (q13). Soft skills identified by the survey data include working effectively and managing time well (q24), getting along with others (q25), the importance of good attendance (q26), and good communication (q27). The interviews reveal that productive workplace experiences are tied directly to soft skills, but participants seemed unable to access those traits as high school students. The soft skills they identified were self-motivation, a willingness to do whatever it takes, communication skills, a strong work ethic, and being resourceful. The participants' experiences raise the question of whether soft skills are innate or are learned skills. The need for soft skills is supported in the workplace by the business research presented in Table 2.3 and suggests that high schools have not successfully addressed this problem (Australian Department of Education, Employment, & Workplace Relations, 2000; Nelson et al., 2000; Scheetz, 1998; Smith & Scoll, 1995). The interview results suggest that the integration of soft skills and school experiences requires further investigation.

A summary of the survey analysis that is presented in Table 4.11 is based on correlation studies. Questions 11 and 12 (applications of learning to real life

situations and access to the workplace) had the highest correlations, above .600 in all three years, and consistently matched with question 17 (feeling prepared for college and/or work). Question 17 was also supported by q16 (teachers expected me to work to my potential and challenged me to do my best) and q24 (learned how to work effectively and manage time). Also important is the frequency and versatility of q17 (feeling prepared for college and/or work), which appears with both hard and soft skill responses. Soft skills covered in the survey include q24 (work effectively and manage time), q25 (getting along with others), q26 (importance of good attendance), and q27 (good communication skills). A distinguishing characteristic of the responses is that the soft skills group independently of the other questions in relation to q24. This is represented in Table 4.3 by high correlations across three years of q24 with q25, q26, and q27. An important finding is that only one correlation was found in relation to adult support. Question 16 (teachers expected me to work up to my potential and challenged me to do my best) only correlated with q17 (feeling prepared for college and/or the workplace).

Table 4.11.  A Summary of Survey Correlations – Hard and Soft Skills

| **Table 4.3** Positive Correlations across 2005, 2006, 2007 | |
| --- | --- |
| q17 with 11,12,13,16, 24 | Felt prepared = real life & workplace applications, access to resources, high expectations, working effectively and time management |
| q24 with 17, 25, 26, 27 | Work effectively & time management = felt prepared, getting along with others, attendance, good communication |
| **Table 4.4** Additional Positive Correlations across 2005, 2006, 2007 | |
| q11 with 12,13,17 | Real life applications = workplace applications, access to resources, felt prepared |
| q12 with 11, 17 | Workplace applications = real life & applications, felt prepared |
| q22 with  28 | Job shadows = resume writing & interview skills |
| q27 with  24, 25, 26 | Good communication skills = working effectively & time management, getting along with others, attendance and being on time |

The principal component analysis described in Table 4.2 grouped the data into two major factors that assessed students' overall school experiences (Factor 1) and students' expectations (Factor 2).  The correlation analysis described in Table 4.4 resulted in clustered responses around applications of learning (q11, q12, and q22) and the application of soft skills (q27).  The inferential analysis revealed little additional information.  Traits described by interview participants as leading to productive workplace experiences after high school can be compared to Table 2.3, which lists the traits that businesses expect to see in new hires.  To summarize the information from Table 2.3, businesses expect new workers to demonstrate self-motivation, a strong work ethic, real life skills, initiative, willingness to take risks, and strong communication skills (Australian Department of Education, Employment, & Workplace Relations, 2000; Nelson et al., 2000; Scheetz, 1998; Smith & Scoll, 1995).  Interview participants identified very similar traits in

themselves - self-motivation, willingness to do whatever it takes, strong

communication skills, strong work ethic, and a resourceful problem-solver, and

attributed these traits as helping them become good reliable workers.  The traits

described by both business researchers and interview participants are also traits

that lead to achievement in school (Scales et al., 2002).  How could these traits

emerge in the workplace and lie dormant in the school setting?

*An Absence of Significant Adult Relationships in the High School Setting*

The influence of adults was only addressed by two items in the high school

survey, q16 (teachers expected me to work up to my potential and challenged me

to do my best) and q21 (adults in my school care about me and treat me with

respect).  Both questions received very high mean scores in the initial assessment

of the survey data, which signifies that students responded positively to this

question.  Yet, q21 did not correlate with any other survey item.  The interview

data identified defining circumstances, or major life changes, tied directly to adult

influences that affected five participants.  Three participants had dealt with a

parent's illness or the death of a parent.  A fourth participant had dealt with her

father's decision to remove his teenage children from school to work on the farm.

A fifth participant dealt with her inability to connect with adults at school.

Interview participants strongly believe that influential adults are critical to

student success.  Although chosen from a selective random sampling, five of the

six interview participants were affected by the absence or illness of an influential

adult in their lives when they were children.  Interview participants openly

discussed the lack of support from, or lack of access to, adults at school and they

strongly recommended that this problem be addressed.  The interview results,

coupled with the lack of measurable information about influential adults from the

senior survey, suggest that the influence of adults should be further investigated.

*The Lack of Relevancy of High School Coursework*

In the survey results, a high correlation was found between students who

felt prepared for college and/or work (q17), and those who experienced real life

applications of their learning (q11), had access to the workplace (q12), and/or were

involved in career planning (q13).  The specified soft skills in q24, q25, q26, and

q27 were how to work effectively and manage my time, how to get along with

others, the importance of good attendance and being on time, and how to

communicate effectively.  These two distinct groupings in the data tell us that

students either felt prepared with hard skills or they felt prepared with soft skills,

not both.

In the context of this research, relevancy of coursework is defined by

questions 11 and 12.  Students who responded positively to q11 had opportunities

to see and understand real life applications of such subjects as physics and Algebra

in the context of hitting a golf ball or learning how the parts of an engine work to

move an automobile.  With q12, students saw or experienced examples of their

coursework in action in the workplace, such as mathematics applications in

computer engineering or accounting. Relevant applications of coursework grouped separately from students' exposure to soft skills, which were described by interview participants as the traits that were vital to their successes at work. These findings suggest that students perceive two separate sets of experiences in high school, one that addresses relevancy of coursework and one that does not. Interview participants repeatedly stated that they lost interest in school because they could not see the purpose of studying English, Algebra, and a number of other required core subjects. Relevancy has come up repeatedly in this research as another important topic that needs further investigation.

*Supporting Information*

An interesting outcome of the survey analysis is that concentrations of data appeared around two factors. Factor 1 measured overall school experiences. Factor 2 measured "should have" questions: q14 (I should have worked harder in school), q18 (school should have required me to meet higher academic standards), q19 (school should have placed more emphasis on helping me prepare for my future career), and q20 (school should have required that I do more homework). The clustering of responses that agree with q14, q18, and q19 could suggest that students are leaving high school with a sense of feeling unprepared for the future. An interesting outcome is that students disagreed that they should have had more homework (q20). This suggests that, while the majority of students believed

that they should have worked harder, been held to higher expectations, and been more focused on their futures, they did not believe that homework was the answer.

Interview participants were asked to make recommendations about what schools could do differently to better prepare students who entered the workplace directly after high school. Five of the six participants recommended connecting students with influential adults who would be direct, supportive, and diligent in their expectations. Four participants encouraged teaching students about the workplace, specifically including a clearly defined work ethic, and preparing students with life skills such as money management, communication skills, and making informed financial choices. Four participants strongly believed that teachers needed to demonstrate the relevance of coursework by tying instruction directly to real-life applications of learning. An overarching message that came through was the importance of helping students to envision their futures. Participants repeatedly stated that they made poor decisions in their youth because they lacked information and had no adults to turn to for advice. Participant 5 summed up the others' experiences when he stated that after high school, when faced with the reality of making a living, he found himself nearly homeless. At that point, he made a commitment to figure out what he needed to do.

Perhaps the statement by Participant 5 addresses the question about how students who were not successful in high school could "figure it out" at work. Necessity has helped us all dig deep to discover what we are really made of. The latent traits that the participants described as supporting their success at work need

not remain dormant throughout high school. Referring again to Table 2.3, the William T. Grant Foundation Commission on Work, Family, and Citizenship (1988) identified the development of basic skills, pre-employment training, improvement of career counseling, and mentoring as solutions to correct the perceived lack of skills in new hires. The theory that has emerged from this analysis is the need for the development of a system of focused adult support in high schools that encompasses the concerns raised by interview participants.

Two disturbing issues were uncovered during the course of this study, issues that will not be addressed in this paper. The first is that school systems do not keep track of high school graduates who do not go to college. The second is that the diligent focus of schools on college preparation sends the message to 55% (Adelman, 1993; Wenrich, 1996) of our students that high school students are not successful if they do not go to college. This message was shared with me with great frustration by one of the interview participants, and was experienced by a number of others – as high school students, these participants believed that they would not become successful because they did not go to college.

CHAPTER FIVE

DISCUSSION

The purpose of this study was to learn from the voices of high school seniors and workers who had not attended college after high school regarding their preparation for post-high school experiences, and their views of high school and work.  The research objectives driving this study were:

1. To increase my understanding of the needs of students who enter the workforce immediately after high school.

2. To compare the perceptions of high school seniors about their school experiences with the experiences of workforce participants who did not attend college.

3. To determine whether or not study participants perceive that the K-12 education system is meeting the needs of students entering the workplace directly after high school.

4. To compare the skills and traits identified by study participants with those identified by business groups as desirable entry-level skills and traits.

5. To determine whether or not the focus of education should be redefined to better support the noncollege-bound student.

Two research questions that incorporated the five research objectives

emerged as the investigation moved forward.  The findings of this study were

addressed in reference to these questions:

- Research Question 1: Can the voices of students and workers influence

  the relationship between business and education, and the direction of

  school reform?

- Research Question 2: Should education be taking another look at its

  focus on academic preparation and its support of students entering the

  workforce?

*Findings: A Mixed Methods Analysis*

*Research Question 1: Can the voices of students and workers influence the relationship between business and education, and the direction of school reform?*

This study examined the relationships between business, education, and the

economy, and specifically addressed the significant impact that business has had

on education and educational policy.  Businesses have identified many

shortcomings in entry-level workers (summarized in Table 5.1), claiming that

those shortcomings are responsible for the U.S. losing its competitive advantage in

the world marketplace (Bix, 2000; Kliebard, 2002; OECD, 1994a & 1994b).  Yet,

the existing research, as reported in the literature review, has not provided workers

with opportunities to express their needs and concerns around workforce
preparation.

Table 5.1.  Summary of Qualities that businesses Expect in New Hires

| Nelson et al. (2000) | Clinton's Human Capital Agenda (Smith & Scoll, 1995) | Scheetz (1998) | Australian Department of Education, Employment, & Workplace Relations (2000) |
| --- | --- | --- | --- |
| Basic skills | Higher-order thinking skills | Real-world work experiences | Communication skills |
| Comprehension | Real life application of skills | Technical skills | Problem solving |
| Work collaboratively | High standards | Leadership qualities | Team work |
| Self-motivated | High expectations | Personal presentation | Initiative |
| Mentally agile | | Attitude | Client focus |
| Reliable | | Communication skills | |
| | | Adaptability, drive, and initiative | |
| | | Preparation for interviewing | |
| | | Career interests | |
| | | Desire for long-term commitment | |
| | | Strong work ethic | |
| | | Willing to take risks | |
| | | Self-motivated | |
| | | Common sense | |

Referencing the data in Table 4.9, workers who were interviewed for this
study consistently identified five traits that they believed had helped them make
gains at work:  self-motivation, willingness to do whatever it takes to get the job
done, communication skills, a strong work ethic, and resourcefulness/problem-
solving.  These traits directly parallel the qualities desired by businesses (Table
5.1): self-motivated, reliable, high standards, strong work ethic, taking initiative.

In contrast, the interview participants generally described themselves as undisciplined high school students who could not see the relevance of high school classes and could not envision their futures after high school. The findings suggest that these essential traits are lying dormant while these students are in high school, and educators are not aware or are not successful at tapping into these critical qualities, particularly for noncollege-bound students.

In assessing the description of Comprehensive School Reform provided in Chapter Two, the focus of school reform has been on the improvement of academic achievement with an emphasis on teacher performance (Martinez & Harvey, 2004). Standards-based accountability has also focused on academic performance and teacher/leadership accountability (Coffey & Lashway, 2002). Visher and colleagues (2004) have identified four concerns about the preparation of high school students. Many high school students (1) are not sufficiently engaged in academic study, (2) do not recognize their own potential, (3) do not know what work is like, and (4) do not know how to prepare themselves for the future. Visher et al. examined these issues in the context of the School-to-Work Opportunities Act, not around academic improvement. The Oregon Career Related Learning Standards addressed the same concerns in the context of career planning, again presenting these issues as separate from academic performance (Oregon Department of Education, 2002). Both the Organization for Economic Cooperation and Development (OECD, 1994a & 1994b) and Greany (2003) have discussed the importance of lifelong learning in the context of the assets that

businesses desire in employees.  The OECD authors supported the development of

a lifelong learning process as an answer to declining productivity, but did not

provide a clear definition of lifelong learning.  Greany stated that the dispositions

for lifelong learning (self-motivation, overcoming barriers to learning, identifying

with mentors, and looking for opportunities to build new skills) have remained

implicit for too long and should become a specific part of the curricular

composition of schools.  Neither Greany nor the OECD offered strategies for

implementing lifelong learning, or soft skills, into the school curriculum.  An

important thread that is consistent throughout the research has been verified by this

study:  academics are viewed separately from the traits that lead to productive

work experiences.

Through this study, the voices of students and workers have added another

layer of information to the research available on workforce preparation with their

validation of the OECD (1994a & 1994b) and Greany (2003) recommendations.

The voices of workers have verified the need for preparation in soft skills and have

supported the importance of adult mentors in the high school setting.  The voices

of high school graduates have increased the awareness of the disconnect at school

between academic preparation and gaining soft skills.  This study has

demonstrated only two methods of gathering input from these important

constituents, but the findings emphasize the importance of their voices.  If

educators and policymakers truly seek feedback on the impact of strategies that are

imposed on schools, the outcomes are not fully measured until the recipients of these changes are included in the assessment.

One interview participant was especially grateful for the opportunity to share her views. Her children are in school, and she has observed no changes in the way her children are taught since the time she was in school. Her children are good students, but she has difficulty responding in a positive way when her son asks why he has to learn subjects such as Algebra. This is a mother who would happily speak to legislators about the relevancy of coursework, the importance of soft skills, and about choosing work over college. It is critical that educators listen to the voices of the people whose lives we touch. Given the venue and the opportunity, the voices of students and workers can affect the demands of businesses on education and the direction of school reform.

*Research Question 2: Should Education be Taking Another Look at its Focus on Academic Preparation and its Support of Students who Enter the Workforce?*

In 1945, a White House conference on vocational education stated that 60% of high school students were not receiving the life adjustment training that they needed (Kliebard, 2002). In 1988, the Commission on Work, Family, and Citizenship stated that 40% of the high school graduates in 1972 did not continue their education and an additional 15% earned less than one semester's worth of post-high school credits by the time they were 30 years of age. The Commission study also reported that in 1996, 60% of high school graduates did not enter college directly after high school (Adelman, 1993; Wenrich, 1996). Most

recently, Achieve, Inc., (2008) reported that in 2002, 57% of the nation's high

school graduates enrolled in 4-year colleges following high school completion.

However, only 74% of those students continued to sophomore status, a 4-year

college retention rate that has held steady nationwide since 1988. With additional

data, it could be argued that the pattern of youth not entering or staying in college

after high school has not changed in 60 years.

    Spring posed a critical question in 1984: Who determines what knowledge

is of most worth? Business and school reform literature have stated that lobbyists

and policymakers outside the field of education have influenced, if not determined,

standards and expectations for schools (Apple, 1995; Dworkin, 2001; Kliebard,

2002; Nassaw, 1979; Spring, 1984). Kerchner (1997) noted that schools evaluate

students on how well they did in school, not on how well they do after they leave

school. This factor is borne out in the absence of a system for maintaining

connections with noncollege-bound high school graduates after high school, yet

the business concerns that appear to be driving much of the educational policy and

school reform decisions revolve around the performance of workers, the majority

of whom are noncollege-educated. The disconnect is that education and the

driving forces behind educational decision-making are still focused on academic

success, but the outcome the business community seeks is about workplace

readiness.

    The traits that interview participants in this research attributed to their

accomplishments at work are the same traits that support student achievement in

school: self-motivation, willingness to do whatever it takes to get the job done, communication skills, a strong work ethic, and resourcefulness/problem-solving. Interview participants did not describe themselves in reference to these traits when they were high school students. In fact, they described themselves in high school as unmotivated, disengaged, and under-performing students. As cited in Chapter Two, researchers have repeatedly noted the absence of such traits in entry-level workers, and their conversations about these traits suggest that these traits are seen as separate from academic learning.

This research study has identified two issues that need our attention. The first issue is that on a national basis, approximately half of high school graduates do not attend college directly after high school (Achieve, Inc., 2008; Adelman, 1993; Weinrich, 1996), yet our focus continues to be on college preparation. The second issue is the need for educators and policymakers to discuss, and address, the integration of academics and the traits (soft skills) that lead to increased productivity. The survey results of this study tell us that students feel prepared with hard skills, or they feel prepared with soft skills, but not both. The data show that questions that described hard skills – real life and workplace applications (q11, q12), and their access to resources (q13) – grouped separately from the questions that described soft skills, specifically in relation to q24 (working effectively and managing time well) and getting along with others (q25), the importance of good attendance (q26), and effective communication (q27). The interview results of this study tell us that noncollege-bound high school graduates

have learned to access the soft skills that help them be successful at work, but those skills were unreachable in high school. Should education take another look at its focus on academic preparation and its support of students who enter the workforce? Absolutely. Educators have a responsibility to help all students build the capacity to advocate for themselves.

*Limitations*

Portland Public Schools (PPS) provided three years of senior survey data for this study. The PPS survey instrument used to collect the data was designed as a tool to gather information and tally responses, not as a statistical assessment tool. (A sample survey titled, Portland Public Schools 2006-2007 Senior Survey Instrument, can be found in Appendix C.) As a result, the design limitations of the survey instrument narrowed the options for analysis. A second limitation in the survey design was the possibility for students to reply to each question with more than one response, which could skew the accuracy and validity of the assessment. A discrepancy in the data was that the reported number of PPS graduates not attending college was far lower than that reported by existing research (Adelman, 1993; Wenrich, 1996). The discrepancy was later addressed by reports from PPS (2007) and Achieve, Inc. (2008), but it should be noted that one issue that could have affected the findings was that the senior survey instrument did not ask students to clarify whether or not they had applied for, or been accepted to, a

college or university.  The survey only asked whether students intended to go to college.

Interview participants were difficult to locate due, in part, to the absence of a system or a connection that allows high schools to stay in touch with graduating seniors who do not attend college.  As a result, the original parameter of interviewing graduates who were five years out of high school was adjusted to include older participants.  Due to the difficulty in finding candidates and the time commitments involved in the grounded theory analysis process, the number of interview participants was limited to six.  Grounded theory researchers (Thompson, 2007; Strauss & Corbin, 1998) have stated that the appropriate sample size is determined when theoretical saturation is reached, or when no new data are revealed.  Although concentrations of responses are evident in the data, the broad scope of this research, especially when compared with such a large survey sample, could warrant a more extensive pool of interview participants.  However, saturation was achieved with six participants.

*Conclusions*

*What Knowledge is of Most Worth?*

The literature reviewed for this study points to the influences of businesses and policymakers who operate outside the field of education as making the determination about what knowledge is of most worth.  These decisions have fueled changes in education for a century.  The answer to this important question

must include the voices of workers who are faced with applying the things they learned in high school in the workplace. The majority of the interview participants in this study indicated that they felt unprepared for work when they graduated from high school. Why aren't we asking all graduates, college-bound and noncollege-bound, what knowledge is of most worth?

Staying connected with high school graduates who enter the workforce is a key component that is missing from our assessment of school success and would help us determine what knowledge is of most worth. I suggest the development of an online database that provides former students with incentives to provide contact information, workplace experience, and feedback about their experiences in the workplace that reflect, or do not reflect, learning in high school. I suggest that this project be funded by the U.S. Department of Education with support from the elements of the business community that drive educational change. With the appropriate outcomes-based design, the wealth of data that could be collected through a mechanism of this kind could provide an unanticipated level of insight about which elements of school truly reach kids. Our decisions about the focus of education would be much more informed and inclusive of all students if we expanded our base of knowledge to include the voices of students and workers.

I also recommend that Portland Public Schools revise its Senior Survey to create an assessment that can be used to refine the model of instruction in the District. The existing survey provides a solid base for expansion. I suggest adding questions that determine whether students have applied, or been accepted, to

college. The survey questions should also be refined to distinguish between experience and perception, and include cross-referenced questions to check for validity. These simple additions would transform the survey into a powerful analytical tool that could inform instruction and potentially influence the success of all high school graduates.

*A Need to Reach Every Student*

High schools continue to focus on academic preparation, despite the alarming trend that 4% of Oregon students drop out of high school annually (Oregon Department of Education, 2007). Fifty-five percent of high school graduates nationwide do not attend college. The message that high schools are delivering, as reported by interview participants in this study, is that students who do not attend college are not successful. If this is truly the message, what a disservice we educators are delivering to our students.

Three strategies for connecting students with school have been uncovered through this research: 1) relevancy of coursework, 2) providing adult support, and 3) teaching soft skills as an active part of the academic curriculum. The successful application of these changes requires that high school teachers provide connections between core subjects and life activities to ensure that students understand and experience the value of their learning. These changes require that teachers talk with kids, and they require administrative support and administrator connections

with students.  And, to truly make these changes systemic and long-lasting, they require the support of educational policy and funding. Can we make this happen?

*A Need to Evaluate How Well Students Do After High School*

How well students do after high school is dependent on how well they are prepared for life.  The first big challenge for educators is to help disconnected students transform themselves into actively engaged young people with a vision for their futures.  Participants in this study identified the need to provide students with caring, supportive adults in the school setting.  The small schools movement is one attempt to help students feel more connected with adults at school.  My recommendation is to design a pilot program that focuses specifically on matching adults with students to mentor students in the context of school and workplace achievement.  Mentors would be coached and monitored to support students in three areas of concentration:  1) to help students imagine themselves in adult roles, 2) to help students understand the importance and application of soft skills, and 3) to address relevant applications for learning.  The interview data suggested that students who have the qualities to be successful in school can find themselves lost in large comprehensive high schools without the support of adults.  Support for the success of mentoring programs is well documented in the literature (Rhodes et al., 2000; Roth et al., 1998). Models for the development of a program for high schools exist in examples like Friends of the Children (Friends of the Children National, 2008), which matches children in first grade with mentors who work

with the child through high school.  An existing model could be expanded or

modified to specifically address support for high school students and workplace

preparation.  A focused mentoring program could be a big step toward increasing

the number of positive and productive workplace experiences for young people.


*Implications of this Study*

        Historically, the educational process has been fraught with change.

Students were tracked into academic and non-academic programs beginning early

in the last century.  Tracking often results from the needs that arise as businesses

change and workers' skills are forced to change to keep up.  The effects of the

industrial revolution, the space age, and computer technology have all driven

changes in education (Kliebard, 2002; Nassaw, 1979; Spring, 1984).  One

unanswered question that has come from the literature review accompanying this

study is why the focus of education is still on college when the pressures that

education has historically received from business have been about workforce

preparation.  It is clearly time for education to address the needs of noncollege-

bound youth alongside their college-bound counterparts.  The interview

participants in this study consistently reported that the language of school needs to

change.  Educators need to stop referring to noncollege-bound students, the

majority of our school population, as at-risk youth.  Change the message that

students who do not go to college are failures.  Give these students a voice, give

them adult guidance, and give them the skills they need to advocate for themselves.

The data from this research clearly raises the concern that something is wrong with the current educational system. What evidence do we have that a comprehensive high school system works? The small schools movement suggests that the large school model does not work, but small schools struggle too. Evidence from worker interviews, the unchanging numbers of students attending college after high school, and the persistent dropout rate add more support to the need for change. Workers and students need to be at the table when policymakers and educators continue the conversation about how schools work.

*Suggestions for Future Research*

This study suggests that future investigations of student success need to include noncollege-bound youth. We must make a concerted effort to include the voices of students and workers as part of the development and assessment of educational policy and educational reform. An ongoing investigation that gathers input from workers about schools is an important next step and should be at the forefront of this process.

Some programs are working. The Gateway to College Program (Portland Community College, 2008) has proven to be a sound model for connecting with students who have not found success in traditional comprehensive high schools. This program supports students who have dropped out of high school or will not

graduate with their class, and who have struggled with grades and attendance. These students have the opportunity to earn a high school diploma and college credits. Scholarships and adult support are provided.

The success of the Gateway to College Program raises some essential questions about why students can succeed in the community college setting when they were not successful in high school.  Is this program addressing the concerns raised by the participants in this study?  How is the community college system making school relevant to students?  Could the Gateway to College program be extended downward to address the dropout problem at the high school level?  I recommend an examination of this program to include interviews with program participants that parallel the interviews conducted in this study.  The success of schools should be examined as a fluid K-16 process that includes solid preparation and proactive support for students who choose to enter college or the workforce after high school.  Data from such a study could add important information to this conversation.

I also encourage educators and policymakers to revisit programs like *Learning to Learn in Schools* (Greany, 2003), a two-year project supported by the Campaign for Learning.  The focus of this project was on the process of teaching students to learn.  The success or failure of this learning model (readiness, resilience, resourcefulness, remembering, and reflectiveness) may hold some critical information that could help educators reach undisciplined, unmotivated students who struggle to envision their futures, and begin the process of helping

students discover school-based applications for the soft skills that are so essential to a productive workplace experience.

The research, as cited in Chapter Two, tells us that business interests have historically driven school change (Dworkin, 2001; Kliebard, 2002; Nassaw, 1979). The review of literature for this study uncovered a gap in information, suggesting that educators have not consistently been a part of the discussions of educational policy and school change, and that the contributions of students and workers to these discussions could not be located.  Students and workers are in the trenches, applying school learning in multiple settings, yet they are rarely asked to share their experiences, and they are certainly not asked for their opinions.  If we don't know what aspects of learning lead to successful workforce participation, how do we know what to fix?  Education affects everyone in this country.  A continued effort must be made to listen to the voices of workers and to use their experiences to drive changes in education.  If policymakers continue to make decisions in isolation, our failure to meet the needs of students will continue on the narrow path that we have followed for the last 100 years.

This study meets the conditions that Fay (1987) outlines as necessary for a critical assessment.  The first is that a crisis must exist in the social system.  The crisis, in this case, is that students are not leaving high school prepared to deal with the demands at work (Bix, 2000; Kliebard, 2002; OECD, 1994a and 1994b; Spring, 1984).  While the majority of high school graduates do not attend college directly after high school, K-12 education remains diligently focused on preparing

students for college.  Our high school graduates are entering the workforce

unprepared to advocate for themselves or to keep up with the expectations at work.

The second condition is that the crisis must be caused, in part, by the false

consciousness of those experiencing the crisis, and the false consciousness must be

amenable to the process of enlightenment.  In this instance, the false consciousness

lies with educators and policymakers who are not recognizing that noncollege-

bound students need their attention.  Awareness is the first step toward change, and

awareness of the challenges that students face at work is the first step toward

enlightenment.  The third condition is that enlightenment must lead to

emancipation (Fay, p.32).  It is my belief that most educators would be astounded

to realize that, first, in addition to extremely high dropout rates, approximately half

of students who graduate from high school do not attend college, and, second, that

students are receiving the message that they are only successful if they choose the

college path.  I am confident that educators who are truly passionate about their

influence on children's lives will rally around this level of systemic change.

Referencing Marcuse and the power of negative thinking (in Held, 1980),

the conditions defined in this study identify a gap in existing social conditions and

the established order.  The majority of high school graduates in this country do not

pursue or complete higher education after high school. Yet the persistent focus of

high school curriculum and school reform has been on academic preparation.

Giroux (2004) defined critical pedagogy as educators supporting students to learn

how to become skilled citizens by learning to define their own values and make

considered choices.  Policymakers and politicians should listen to the wise voices

of students and workers and let their wisdom guide educational decision-making.

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Appendix A

Estimated Retention and Graduation Rates for PPS High School Graduates
Entering 4-Year and 2-Year Colleges in the Year Following High School
Graduation

# Estimated* Retention and Graduation Rates for PPS High School Graduates Entering 4-Year and 2-Year Colleges in the Year Following High School Graduation

### Based on June 2007 data from National Student Clearinghouse

<u>District</u>

**Students Attending a 4-Year College the Year Following High School Graduation**

| Graduation Year | High School Graduates | | Graduates Entering a 4-Year College/University in the Year Following High School Graduation | | Of Those Enrolling in a 4-Year College/University the Year Following High School Graduation | | | | | | | | | | | | | | | | Total # of Bachelor's Degrees Earned (includes students not in database in the year following graduation) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Continued in Year 2 | | Continued in Year 3 | | Continued in Year 4 | | Continued in Year 5 | | Continued in Year 6 | | Earned a BS/BA in 3 Years | | Earned a BS/BA in 4 Years | | Earned a BS/BA in 5 Years | | Earned a BS/BA in 6 Years | | | |
| | N | | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| 1999-2000 | 2698 | | 907 | 33.6% | 859 | 94.7% | 827 | 91.2% | 792 | 87.3% | 532 | 58.7% | 334 | 36.8% | 4 | 0.4% | 300 | 33.1% | 201 | 22.2% | 64 | 7.1% | 681 | 66.8% |
| 2000-2001 | 2802 | | 1006 | 35.9% | 941 | 93.5% | 906 | 90.1% | 879 | 87.4% | 590 | 58.6% | 413 | 41.1% | 8 | 0.8% | 342 | 34.0% | 185 | 18.4% | 2 | 0.2% | 644 | 57.9% |
| 2001-2002 | 2854 | | 1048 | 36.7% | 979 | 93.4% | 946 | 90.3% | 915 | 87.3% | 600 | 57.3% | 7 | 0.7% | 8 | 0.8% | 376 | 35.9% | 1 | 0.1% | | | 515 | 43.7% |
| 2002-2003 | 2779 | | 1056 | 38.0% | 1004 | 95.1% | 953 | 90.2% | 892 | 84.5% | 13 | 1.2% | | | 9 | 0.9% | | | | | | | 86 | 7.6% |
| 2003-2004 | 2623 | | 1097 | 41.8% | 1038 | 94.6% | 979 | 89.2% | 3 | 0.3% | | | | | | | | | | | | | 1 | 0.1% |
| 2004-2005 | 2547 | | 984 | 38.6% | 917 | 93.2% | 19 | 1.9% | | | | | | | | | | | | | | | | |
| 2005-2006 | 2678 | | 1056 | 39.4% | | | | | | | | | | | | | | | | | | | | |

**Students Attending a 2-Year College the Year Following High School Graduation**

| Graduation Year | High School Graduates | | Graduates Entering a 2-Year College/University in the Year Following High School Graduation | | Of Those Enrolling in a 2-Year College/University the Year Following High School Graduation | | | | | | | | | | | | | | | | Total # of Bachelor's Degrees Earned | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Continued in Year 2 | | Continued in Year 3 | | Continued in Year 4 | | Continued in Year 5 | | Continued in Year 6 | | Earned an Associate's Degree | | Earned a BS/BA in 4 Years | | Earned a BS/BA in 5 Years | | Earned a BS/BA in 6 Years | | | |
| | N | | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % | N | % |
| 1999-2000 | 2698 | | 598 | 22.2% | 504 | 84.3% | 396 | 66.2% | 328 | 54.8% | 288 | 48.2% | 258 | 43.1% | 100 | 16.7% | 10 | 1.7% | 25 | 4.2% | 30 | 5.0% | 65 | 10.9% |
| 2000-2001 | 2802 | | 725 | 25.9% | 510 | 70.3% | 453 | 62.5% | 366 | 50.5% | 329 | 45.4% | 257 | 35.4% | 82 | 11.3% | 10 | 1.4% | 22 | 3.0% | 1 | 0.1% | 33 | 4.6% |
| 2001-2002 | 2854 | | 679 | 23.8% | 504 | 74.2% | 417 | 61.4% | 330 | 48.6% | 286 | 42.1% | 7 | 1.0% | 60 | 8.8% | 9 | 1.3% | 1 | 0.1% | | | 10 | 1.5% |
| 2002-2003 | 2779 | | 703 | 25.3% | 497 | 70.7% | 417 | 59.3% | 361 | 51.4% | 19 | 2.7% | | | 53 | 7.5% | | | | | | | 1 | 0.1% |
| 2003-2004 | 2623 | | 626 | 23.9% | 470 | 75.1% | 357 | 57.0% | 1 | 0.2% | | | | | 12 | 1.9% | | | | | | | | |
| 2004-2005 | 2547 | | 601 | 23.6% | 406 | 67.6% | 12 | 2.0% | | | | | | | 1 | 0.2% | | | | | | | | |
| 2005-2006 | 2678 | | 625 | 23.3% | | | | | | | | | | | 2 | 0.3% | | | | | | | | |

*Portland Public Schools contracts with the National Student Clearinghouse (NSC) to provide follow-up data on PPS high school graduates. Not all PPS graduates who attend college are included in the NSC database, however. NSC receives records from more than 2,800 U.S. higher ed institutions that enroll more than 14.5 million students--91% of total U.S. enrollment in higher education. Colleges in Oregon with enrollments over 1,000 that do not report enrollment data to NSC are: The Art Institute of Portland, Marylhurst University, OHSU, Pioneer Pacific College, Western Business College, and Western Culinary Institute.

If a student enrolled at both a 2-year and 4-year institution during the year following high school graduation, the student's record will be included on the 4-year enrollment report.

Appendix B

Proposal Requesting Permission from Portland Public Schools
to Access Survey Data

# PORTLAND PUBLIC SCHOOLS
Research Proposal
February 22, 2005

Submitted by:        Willa M. Campbell
                     503-502-6737 (cell)
                     503-916-5600 (work)
                     willa.campbell@comcast.net

## SCOPE AND SIGNIFICANCE OF THE STUDY

This study fulfills one requirement for the completion of a Doctor of Philosophy (PhD) in Educational Leadership at Oregon State University.  The overall study is a mixed methods research project that combines interview data analyzed using grounded theory, and survey data processed with traditional statistical methods.

The following paragraphs provide some background regarding the impact of technology on entry level jobs, and the employability of non-college bound youth. In light of the direction that Portland Public Schools is going with regard to high school reform and the need for information about non-college bound students, the outcome of this research is expected to shed light on:

- What non-college bound graduating seniors expect from work.
- What dropouts who have returned to school found at work.
- Students' and entry level workers' perspective on the relationship between school and work.
- What school factors contribute to success at work.
- What traits makes non-college bound students successful at work.

*BACKGROUND*

An antagonistic relationship between education and business has existed for many years, with business blaming education for losses in productivity, and education reacting to pressure from business by changing curriculum, school structure, and expectations.  Nassaw (1979) examined the early 20th century influence of the Industrial Age on curriculum.  This relationship led to the decision to track students into particular courses of study based on someone's assumptions about what their work aspirations should be.  Spring (1984) examined educational changes in the 1970s and 1980s that were driven first by high unemployment rates, then by a shortage of workers.  The large number of baby boomers in the 1970s job market shifted the focus of schools to career and vocational education.  Then the dramatic drop in the 1980s labor force caused businesses to call for an increased concentration on technology, e.g., math, science, and other academic fields, to raise the skill level of entry level workers and ultimately increase the competitiveness of businesses on an international scope.  More examples of

business driving educational decisions can be found in the attached research proposal completed for Oregon State University.

The result of this lack of collaboration and the punitive relationship that has developed between education and business has led to complete disagreement on the traits that identify a successful entry level worker (see Table 5, attached). Decision-makers are continuing to look to education for answers to a problem that is not clearly defined. The research examined for this project demonstrated that educational policy makers looked at productivity and other economic data to inform their decisions. I was not able to uncover any research that went directly to the workers, and no one talked with high school students about their experiences and expectations regarding school and work.

*GAPS IN THE RESEARCH*

Little has been done to track high school graduates who do not attend college. Less has been done to track high school dropouts. Valuable information can be learned from their experiences and their perceptions, information that can help schools and businesses be more effective in transitioning students from school to work. The data from this study is only a beginning but it can inform further research and could support collaborative, problem-solving discussions between education and business to begin to solve an employability problem that affects 40% of our high school graduates.

The focus of my investigation is laid out in the following questions:
1. Considering the changes that technology has imposed on the workplace, what defines success for today's entry level worker who has no college training?
2. What elements of their K-12 educational experience were the most helpful and the most detrimental to the success of the participants?
3. What are the commonalities between working high school graduates and dropouts returning to high school, and the perceptions of the workplace for seniors about to graduate? Can these shared views and experiences be built upon to aid educators and business people in their decision-making process? How can the answers to these questions drive positive, problem-solving discussions between business groups and education that result in policy that supports, rather than constricts, educational growth?

Within these global questions are some specific points that I wish to investigate:
1. After considering the views and experiences of recent high school graduates and dropouts returning to school, what body of educational or instructional knowledge is identified as being of most worth? [Historically, business has asserted that what is good for business is good for education (Nassaw, 1979; Spring, 1994). Do the findings of this investigation support emphasizing academics for all students, as reflected by the Oregon State Standards and No Child Left Behind, or do they indicate another direction?]

2. Are graduates finding that their educational preparation would have been strengthened by basic skills (reading, writing, mathematics) or lifelong learning skills (problem-solving, communication skills)? From the students' perspectives, what do employers expect from entry level workers? (As illustrated in Table 5, business sources cannot come together to provide one skill set that defines the successful entry level worker.)

3. Does the data shed light on modifications to K-12 education, an alternative to college or trade school, or a third alternative that would help non-college bound students be more successful? [Researchers cannot reach consensus on how to improve the quality of the workforce (OECD, 1994b; Leontief & Duchin, 1986; Picus & Bryan, 1997; and Nelson, J. L., Polansky, S.B., and Carlson, K. 2000).]

## RESEARCH DESIGN, LOGISTICS, AND TIMELINE

The complexity of the relationships between education and work, and of the audiences involved (business people, educators, students, policy makers), has led to a mixed methods research design that involves both interviews and surveys. The fundamental principal of mixed methods research is data collection that uses different strategies, methods, and approaches that result in sets of data that strengthen one another (Johnson & Turner, 2003, as cited in Johnson & Onwuegbuzie, 2004; Cresswell, 2003; Tashakkori & Teddlie, 1998). The result is a superior product, not because the data has been substantiated, but because the researcher's understanding has been expanded through the application and analysis of multiple research methods. Combining quantitative and qualitative data in this study will also facilitate communication between and across groups, and promote collaborative dialogue among the parties involved.

*Study Participants.*

Participants will be selected using stratified nonrandom sampling strategies (Tashakkori & Teddlie, 1998). Individuals will come from predetermined groups (non-college bound high school seniors, students who have dropped out of high school and returned, and high school graduates five years out of high school who are considered successful in their working lives).

Survey participants will be high school seniors and dropouts who have returned to school. I am requesting through this proposal to add questions to the existing PPS Senior Survey. I would like to work with the PPS Senior Survey Committee and the Research, Evaluation, and Assessment Department to help with the data collection, processing and analysis.

To ensure participant safety and anonymity, I have completed the necessary coursework to understand the Oregon State University Human Subjects policy. I will follow that policy throughout the research process. Written permission and a release of information will be gathered from each interview participant, including signatures from parents and guardians, as needed. These forms will be filed with my collection of research. Coding and other techniques

will be used to ensure anonymity of the data and the participants. Confidential data will be destroyed following my dissertation defense, targeted for spring 2006.

*Data Source*

The initial data source for this study will be interview data collected from students who graduated from high school in 2000, and are considered successful at work. Participants will number eight to ten people. The adults referring these students to the study will determine who is successful. The adults will provide their written definition of success to the researcher as part of the referral process.

The interview data will be analyzed using grounded theory, a qualitative research method that uses a systematic set of procedures to refine the data that come from the interview process (Strauss & Corbin, 1990). The controlled procedure used to analyze the interview data reveals relationships among the data that might otherwise go undiscovered.

The interview process is expected to refine the definition of success in the workplace, and will provide the foundation for survey questions that will be administered to non-college bound high school seniors, and students who have dropped out of high school and returned.The survey questions that support this research project will be approved by the PPS Senior Survey committee. The questions will then be added to the Senior Survey.

*Data Collection*

Interviews will be conducted in one-on-one situations at area coffee shops and will be recorded using a digital or cassette recorder. Field notes will be taken in long-hand in a notebook. Interview participants will complete an informed consent form that will be explain the intent of the research, define any risks involved, and ensure confidentiality. Consent forms will be housed with the data in a secure location.

Surveys will be conducted in a group setting at students' schools. The surveys will be administered by teachers who will read scripted instructions to the participants to ensure consistency in administration. Students will complete a scan sheet, on which they record their responses to the survey questions. The surveys are anonymous. The researcher will have access to the data and related demographics, but not to the identity of the participants.

The accessibility of dropouts returning to school has come into question. Should this population not be identifiable through surveying, I may need to interview eight to ten students who fit this category. I would use the same process and analysis used for high school graduates five years out of high school. I have included sample interview questions and an informed consent form, should this become the case.

*Data Analysis*

Interviews of high school graduates who are successful in the workplace will be analyzed using grounded theory procedures (Strauss & Corbin, 1998;

Charmaz, as cited in Denzin & Lincoln, 2000), refining the interview questions throughout the process. The interviews will be transcribed. The researcher will then review each transcription, looking for code words that identify themes in the data. Each set of interview data will be compared to the other interviews, than the interview data sets will be compared to the emerging themes until the point of saturation is reached. The final step is a written analysis of the findings.

The data from the interviews will be used to formulate survey questions for high school seniors about to graduate who have no college plans, and for high school dropouts who have returned to school. The survey responses will be scanned into a database and will then be analyzed statistically.

The last step in mixed methods research is to compare the grounded theory analysis with the survey analysis. The outcome is expected to expand the definition of a successful entry level worker, to have a better understanding of students' perception of the workplace and their readiness to join the workforce, and to begin to use that information to help define links between high school and work.

*Timeline for Study*

This study is expected to begin no later than March 2005, and conclude at the time of the dissertation writing.

Submit proposal to Portland Public Schools        February 2005
Research participant selection
March-April 2005
Interviews
                        March-May 2005
Analysis of interview data
March-May 2005
Development of survey questions
March 2005
Collection of survey data
        April 2005
Analysis and dissertation writing
May-December 2005
Dissertation Defense
        Spring 2006

The timeline is dependent on collecting data from students before the end of the 2004-2005 school year. If I do not meet that deadline, data will be collected in fall 2005, delaying the dissertation defense until spring 2006.

**DATA COLLECTION TOOLS** – attached
- Table 5 from OSU Proposal
- Mock-up of Senior Survey
- Interview Questions
- Informed Consent Form

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## Mock-up of PPS Senior Survey

A. *Demographic information*
B. *Scholarship information*

C. Following graduation, I plan to:
- ☐ Enroll in a 4-year college or university
- ☐ Enroll in a community college
- ☐ Enroll in a technical/trade school
- ☐ Enter the workforce
- ☐ Join the military
- ☐ No immediate plans at this time

D. What is the single MOST import recommendation you would make to improve the quality of your high school experience?

_____

1. During my senior year, I was employed in a job outside of school.      ___ Yes  ___ No

    If yes, I was employed for:
- ☐ Less than 10 hours a week
- ☐ 10-15 hours a week
- ☐ 15-20 hours a week
- ☐ more than 20 hours a week

    My high school studies were directly related to my employment.  ___ Yes ___ No

    My job/employment was in an area I plan to pursue as a career.  ___ Yes ___ No

2. During my senior year, I had 1 or more periods of late arrival, early dismissal, and/or study hall.  ___ Yes  ___ No

3. How would you describe your high school program?
- ☐ A college/university preparation program
- ☐ A vocational/occupational trade program
- ☐ A general high school program

4. The MOST influential person in helping me succeed in high school was:
- ☐ Teacher
- ☐ Parent/guardian/family member
- ☐ Employer
- ☐ Counselor

- Friend
- Myself
- No one

5. How much do you disagree or disagree with the following statements about your high school experience? *Responses are on a 1-4 scale, Strongly Agree to Strongly Disagree*

    a.      School offered me the opportunity to apply my classroom learning to real world situations.

    b.      School offered me the opportunity to apply my classroom learning to the workplace

    c.      I should have worked harder while I was in school.

    d.      School counselors and/or teachers assisted me in exploring career opportunities after high school.

    e.      Teachers expected that I work up to my potential and challenged me to do my best.

    f.      School has prepared me with the skills I need in college and/or the workplace.

    g.      School should have required me to meet higher academic standards.

    h.      School should have placed more emphasis on helping me prepare for my future career.

    i.      School should have required more homework.

    j.      The adults in my school care about me and treat me with respect.

    k.      In school, I have learned how to access resources and find information to help me with post-high school plans.

    l.      Workplace experience based on my career interests: job shadow, internship, etc.

6. My high school education provided me with the following skills to help me succeed: *Responses are on a 1-4 scale, Strongly Agree to Strongly Disagree*

    a.      Reading, writing, math skills.

    b.      Skills for the workplace.

    c.      How to work effectively.

    d.      How to get along with others.

    e.      How to communicate effectively.

    f.      What employers expect of me.

    g.      The importance of good attendance and being on time.

# GUIDING QUESTIONS FOR OPEN-ENDED INTERVIEWS
Participants:  High School Dropouts Returning to School

*NOTE:  These interview questions will only be used if the dropout population needed for this study is not identifiable through the survey process.*

The three groups of questions referred to throughout the OSU proposal will be used to initiate the interviews.  Analysis of responses and questions occurs throughout the grounded theory process, which will likely result in refinement of the initial questions.

The initial questions:
1. What do you think it takes to be successful at work?

2. What did you expect from a job when you left high school?  What did you find?  What kinds of jobs were available to you?  What were you prepared for?  What surprised you?  How do you think technology has affected the kinds of jobs that are out there?

3. Think about your K-12 school experience.  What was it about school that helped you at work?  What parts of school got in your way?  Explain.  What are you doing differently, now that you're back in school?  What should schools do differently to help kids prepare for work?

4. If you could give some advice to students who are thinking about dropping out, what would you tell them about work?  What would you tell them about school?  What do you think schools could do differently to help kids be successful?

# INTERVIEW PARTICIPANTS
## INFORMED CONSENT FORM

You are being asked to participate in a research study that is part of the requirement to complete a Doctor of Philosophy (PhD) in Educational Leadership at Oregon State University.

**THE INTERVIEW** – You have been identified as someone who left school and came back. You will be asked some questions about your work experiences, what you learned while you were away from school, and about what you think schools could do differently to support students. The interview will be taped.

WHERE – A private location at school or an area coffee shop.

HOW LONG – One hour interview with a possible follow-up telephone call to clarify information.

WHY SHOULD I PARTICIPATE? – This study is an attempt to gather information from high school graduates from 2000 who are successful at work and who did not go to college, and from dropouts who have returned to school. That information will be compared with information from seniors who are about to graduate in 2005, and who do not plan to go to college. The goal is to identify what makes a successful worker, and to figure out what schools can do to help more non-college bound students be successful at work.

**VOLUNTARY PARTICIPATION** – You are not obligated to participate in this study. You can withdraw at any time.

**CONFIDENTIALITY** – The information you share is confidential. The tape and transcript will be kept with my research in a secure location. My college advisor and I will be the only people who will have access to the information you share. Your name will not be used.

**CONTACT INFORMATION –** Questions or concerns? Contact

Willa M. Campbell at 503-502-6737 or willa.campbell@comcast.net.

By signing this form, I understand and agree to the stated conditions:

Signed: _____ Date: _____
*Student*

_____ Phone: _____
*Print Name*

Signed: _____ Date: _____
*Parent (if under 18)*

_____ Phone: _____
*Print Name*

Appendix C

Sample:  Portland Public Schools 2006-2007 Senior Survey Instrument

**Portland Public Schools**
**2006-07 Senior Survey**

Your honest answers to these questions will help the district improve high school for the students who follow you. If you are uncomfortable answering any question, you may leave it blank.

Your responses will remain completely confidential and your name will not be attached to your answers.

**1. Following graduation (do not include summer plans), I plan to:**

- ○ enroll in a four-year college/university
- ○ enroll in a community college
- ○ enroll in a technical/trade school
- ○ enter the work force
- ○ join the military
- ○ no immediate plans at this time

**2. If you have chosen not to go to college, why did you make that decision? (mark all that apply)**

- ○ I have a job.
- ○ I can be successful at work without college.
- ○ I need to work to help support myself and/or my family.
- ○ I have been told that I am not college material.
- ○ None of my friends are going to college.
- ○ I don't think I can be successful in college.
- ○ I don't have money for college.
- ○ I don't think I can get into college.
- ○ I don't feel like high school has prepared me for college.
- ○ Take a year off, then continue school.
- ○ Don't want to go to college.
- ○ Other reasons (please be specific) _____

**3. During my senior year, I had one or more periods of late arrival, early dismissal, and/or study hall.**

○ Yes   ○ No   *If yes, I used that time to:* ○ work   ○ study   ○ family obligations (help at home)
(mark all that apply)   ○ other_____

**4. During my senior year, I was employed in a job outside of school.**

○ Yes   ○ No   *If yes, I was employed for:* ○ fewer than 10 hours per week   ○ 16-20 hours per week
○ 10-15 hours per week   ○ more than 20 hours per week

**5. My job/employment was in an area that I plan to pursue as a career.**   ○ Yes   ○ No   ○ Not employed

**6. My high school studies were directly related to my employment.**   ○ Yes   ○ No   ○ Not employed

**7. How would you describe your high school program?**

- ○ college/university preparation
- ○ vocational/occupational trade program
- ○ general high school program

**8. The single MOST influential person in helping me succeed in high school was:**

- ○ parent/guardian/family member
- ○ teacher
- ○ counselor
- ○ employer
- ○ friend
- ○ someone else
- ○ no one
- ○ myself

_____

**9. Did you stop attending school at some point during your high school years and come back later to finish high school?**

○ Yes   ○ No

**10. I have attended a Portland Public High School**

○ fewer than two years   ○ two or more years

| Please do not write in this area. | Please continue on back. |

| How much do you agree with the following statements about your high school experience? | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Sure |
|---|---|---|---|---|---|
| 11. School offered me the opportunity to apply my classroom learning to real life situations. | ④ | ③ | ② | ① | ⑨ |
| 12. School offered me the opportunity to apply my classroom learning to the work place. | ④ | ③ | ② | ① | ⑨ |
| 13. In school I have learned how to access resources and find information to help with my post-high school plans. | ④ | ③ | ② | ① | ⑨ |
| 14. I should have worked harder on schoolwork while I was in school. | ④ | ③ | ② | ① | ⑨ |
| 15. School counselors and/or teachers assisted me in exploring possible career opportunities. | ④ | ③ | ② | ① | ⑨ |
| 16. Teachers expected me to work up to my potential and challenged me to do my best. | ④ | ③ | ② | ① | ⑨ |
| 17. School has prepared me with the skills I will need in college and/or the work place. | ④ | ③ | ② | ① | ⑨ |
| 18. School should have required me to meet higher academic standards. | ④ | ③ | ② | ① | ⑨ |
| 19. School should have placed more emphasis on helping me prepare for my future career. | ④ | ③ | ② | ① | ⑨ |
| 20. School should have required that I do more homework. | ④ | ③ | ② | ① | ⑨ |
| 21. The adults in my school care about me and treat me with respect. | ④ | ③ | ② | ① | ⑨ |
| 22. School provided me with the opportunity to participate in job shadows and/or internships. | ④ | ③ | ② | ① | ⑨ |

**My high school education provided me with the following skills to help me succeed:**

| | Strongly Agree | Agree | Disagree | Strongly Disagree | Not Sure |
|---|---|---|---|---|---|
| 23. Reading, writing, math skills. | ④ | ③ | ② | ① | ⑨ |
| 24. How to work effectively and manage my time well. | ④ | ③ | ② | ① | ⑨ |
| 25. How to get along with others. | ④ | ③ | ② | ① | ⑨ |
| 26. The importance of good attendance and being on time. | ④ | ③ | ② | ① | ⑨ |
| 27. How to communicate effectively. | ④ | ③ | ② | ① | ⑨ |
| 28. How to write a resume and practice interview skills. | ④ | ③ | ② | ① | ⑨ |

29. I am a:　　○ Male　　○ Female

30. Which ethnic/cultural group describes you best?
　○ American Indian　○ African American　○ Hispanic American
　○ White　○ Asian American　○ Mixed Race/Other

31. My mother's/guardian's highest educational level is:
　○ Don't know　○ Some college　○ Masters degree or higher
　○ Less than a high school diploma　○ Community college degree
　○ High school diploma　○ Four-year college degree

32. My father's/guardian's highest educational level is:
　○ Don't know　○ Some college　○ Masters degree or higher
　○ Less than a high school diploma　○ Community college degree
　○ High school diploma　○ Four-year college degree

**What is the single MOST important recommendation you would make to improve the quality of your high school experience?**

Appendix D


Comparison of Mean Responses to PPS Survey Questions
for Noncollege-Bound and College-Bound High School Graduates

| College Bound & Non-college Bound Comparisons by Mean | 2005 | | | | | | 2006 | | | | | | 2007 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4-yr | 2-yr | Tech | Work | Military | No Plans | 4-yr | 2-yr | Tech | Work | Military | No Plans | 4-yr | 2-yr | Tech | Work | Military | No Plans |
| q11 School offered me the opportunity to apply my classroom learning to real life situations. | 2.76 | 2.74 | 2.88 | 2.61 | 2.38 | 2.62 | 2.73 | 2.78 | 2.71 | 2.68 | 2.63 | 2.64 | 2.73 | 2.81 | 2.66 | 2.77 | 2.35 | 2.58 |
| q12 School offered me the opportunity to apply my classroom learning to the work place. | 2.50 | 2.63 | 2.75 | 2.50 | 2.22 | 2.54 | 2.52 | 2.69 | 2.64 | 2.53 | 2.66 | 2.59 | 2.51 | 2.69 | 2.56 | 2.71 | 2.48 | 2.45 |
| q13 In school I have learned how to access resources and find information to help with my post-high school plans. | 3.08 | 2.99 | 2.92 | 2.84 | 2.82 | 2.70 | 3.06 | 3.01 | 2.94 | 2.81 | 2.92 | 2.95 | 3.07 | 3.04 | 2.82 | 2.92 | 2.70 | 2.80 |
| q14 I should have worked harder on schoolwork while I was in school. | 2.69 | 3.19 | 3.21 | 3.17 | 3.1 | 2.99 | 2.75 | 3.15 | 3.01 | 3.12 | 3.13 | 3.06 | 2.76 | 3.28 | 3.26 | 3.21 | 3.56 | 3.11 |
| q15 School counselors and/or teachers assisted me in exploring possible career opportunities. | 2.38 | 2.57 | 2.61 | 2.47 | 2.43 | 2.56 | 2.43 | 2.73 | 2.68 | 2.64 | 2.47 | 2.61 | 2.47 | 2.73 | 2.81 | 2.77 | 2.24 | 2.63 |
| q16 Teachers expected me to work up to my potential and challenged me to do my best. | 3.00 | 3.06 | 2.85 | 3.09 | 2.62 | 2.85 | 3.03 | 3.02 | 3.11 | 2.92 | 2.87 | 3.04 | 3.02 | 3.04 | 3.00 | 2.96 | 2.43 | 2.95 |
| q17 School has prepared me with the skills I will need in college and/or the work place. | 2.92 | 2.86 | 2.67 | 2.62 | 2.18 | 2.59 | 2.97 | 2.85 | 2.71 | 2.61 | 2.59 | 2.74 | 2.98 | 2.84 | 2.55 | 2.66 | 2.33 | 2.64 |
| q18 School should have required me to meet higher academic standards. | 2.52 | 2.67 | 2.60 | 2.51 | 2.76 | 2.65 | 2.62 | 2.81 | 2.57 | 2.65 | 2.63 | 2.65 | 2.64 | 2.70 | 2.57 | 2.56 | 2.44 | 2.58 |
| q19 School should have placed more emphasis on helping me prepare for my future career. | 2.78 | 3.00 | 2.87 | 3.01 | 3.12 | 2.91 | 2.76 | 2.96 | 2.95 | 2.90 | 2.89 | 2.77 | 2.78 | 2.95 | 2.98 | 2.86 | 2.91 | 2.81 |
| q20 School should have required that I do more homework. | 1.84 | 2.06 | 2.04 | 1.94 | 2.00 | 2.03 | 1.92 | 2.18 | 1.91 | 2.04 | 1.84 | 2.07 | 1.87 | 2.12 | 2.03 | 1.93 | 1.87 | 2.00 |
| q21 The adults in my school care about me and treat me with respect. | 2.99 | 3.00 | 3.08 | 2.87 | 2.89 | 2.86 | 3.07 | 2.99 | 3.09 | 2.95 | 2.79 | 2.98 | 3.03 | 2.98 | 2.92 | 3.01 | 2.65 | 2.98 |

| Question | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| q22 School provided me with the opportunity to participate in job shadows and/or internships. | 2.17 | 2.38 | 2.31 | 2.34 | 2.23 | 2.33 | 2.23 | 2.44 | 2.45 | 2.44 | 2.17 | 2.33 | 2.35 | 2.46 | 2.31 | 2.45 | 2.42 | 2.20 |
| q23 My high school education provided me with the following skills to help me succeed: Reading, writing, math skills. | 3.34 | 3.22 | 3.13 | 3.13 | 3.19 | 3.18 | 3.32 | 3.22 | 3.10 | 3.10 | 3.13 | 3.17 | 3.33 | 3.24 | 3.12 | 3.29 | 3.04 | 3.26 |
| q24 How to work effectively and manage my time well. | 2.76 | 2.75 | 2.81 | 2.78 | 2.45 | 2.69 | 2.78 | 2.88 | 2.82 | 2.81 | 2.60 | 2.80 | 2.76 | 2.82 | 2.68 | 2.65 | 2.50 | 2.69 |
| q25 How to get along with others. | 2.93 | 2.90 | 2.96 | 2.83 | 2.47 | 2.82 | 2.99 | 2.95 | 2.93 | 2.90 | 2.83 | 2.81 | 2.99 | 2.91 | 2.88 | 2.90 | 2.50 | 2.86 |
| q26 The importance of good attendance and being on time. | 2.71 | 2.94 | 3.00 | 2.96 | 2.48 | 2.86 | 2.73 | 2.95 | 2.88 | 2.81 | 2.76 | 2.94 | 2.75 | 2.98 | 2.81 | 2.79 | 2.83 | 2.80 |
| q27 How to communicate effectively. | 2.94 | 2.95 | 2.87 | 2.85 | 2.43 | 2.80 | 3.03 | 2.95 | 2.86 | 2.87 | 2.74 | 3.00 | 2.99 | 2.98 | 2.89 | 2.89 | 2.68 | 2.85 |
| q28 How to write a resume and practice interview skills. | 2.30 | 2.61 | 2.55 | 2.49 | 2.32 | 2.48 | 2.33 | 2.65 | 2.41 | 2.44 | 2.55 | 2.54 | 2.32 | 2.63 | 2.64 | 2.53 | 2.95 | 2.57 |

Appendix E

Sample of Informed Consent Document
Completed by Interview Participants

**INFORMED CONSENT DOCUMENT**
**INTERVIEW PARTICIPANT**

Project Title: **Seniors' and High School Graduates' Perceptions of**
**Workforce Readiness**
Principal Investigator: **Dr. Chris Ward, School of Education**
Research Staff: Willa M. Campbell, PhD candidate

## PURPOSE

This is a research study. The purpose of this research study is to gather information
through interviews from high school graduates who have not gone to college and are
considered successful at work. The interview data will be compared with surveys of
high school seniors who are about to graduate and have no college plans, and with
students who left school early and have come back to finish high school. This project
is expected to help decision-makers understand:

- what school factors contributed to success at work,
- what non-college bound graduating seniors expect from work, and
- students' and entry level workers' perspectives on the relationship
  between school and work.

The results are expected to help educators make more informed decisions about
preparing high school students for the workplace.

The purpose of this consent form is to give you the information you will need to help
you decide whether to be in the study or not. Please read the form carefully. You
may ask any questions about the research, what you will be asked to do, the possible
risks and benefits, your rights as a volunteer, and anything else about the research or
this form that is not clear. When all of your questions have been answered, you can
decide if you want to be in this study or not. This process is called "informed
consent." You will be given a copy of this form for your records.

We are inviting you to participate in this research study because you are a high school
graduate who did not attend college and you are successful at work.

## PROCEDURES

If you agree to participate, your involvement will last for approximately one hour,
with a possible follow-up telephone call that would last from five to fifteen minutes.

The following procedures are involved in this study.

- The researcher will either send you the informed consent prior to the
  interview, or will bring it to the interview site, whichever works best for
  you. The interview will not proceed without your signed consent.
- The interview will be taped and some notes will be taken. After the
  interview, the taped comments will be transcribed or typed. Interview

tapes and transcriptions will be kept with the researcher's documentation in a secure location at all times.

- The researcher will analyze the transcriptions of all interview participants. The researcher will then compare the interview data to survey data from Portland Public School seniors who are about to graduate and who have no plans to attend college, and students who left high school and have returned.

- The analysis of the data will become part of the researcher's doctoral thesis. When the research is complete and accepted by the university committee, the data will be destroyed.

- TIMELINE:

| | |
|---|---|
| Interview Participant Selection | April-June 2007 |
| Interviews | April-July 2007 |
| Analysis of Interview Data | May-August 2007 |
| Dissertation Writing | July-November 2007 |
| Dissertation Defense | December 2007 |

## RISKS

The possible risks associated with participating in this research project are as follows.

- Survey participants will be exposed to little risk. Signing this informed consent form ensures participants of anonymity.

- The tapes and transcripts of the interviews will be kept in a secure location.

- The tapes and transcripts will be destroyed following the completion of the thesis.

## BENEFITS

The potential personal benefit that may occur as a result of your participation in this study is the satisfaction that comes with involvement in a project that could improve the workplace success of high school graduates who do not attend college. The researchers anticipate that society may benefit from this study by gaining a better understanding of the experiences of non-college bound students in the workplace, and how that information might improve the contribution of K-12 education toward workplace preparation.

## COSTS AND COMPENSATION

You will not have any costs for participating in this research project. You will not be compensated for participating in this research project. The researcher will purchase your beverage at the coffee shop at the time of the interview.

## CONFIDENTIALITY

Records of participation in this research project will be kept confidential to the extent permitted by law. However, federal government regulatory agencies, and the Oregon State University Institutional Review Board (a committee that reviews and approves research studies involving human subjects) may inspect and copy records pertaining to this research. It is possible that these records could contain information that personally identifies you. The interview tapes, transcripts, and the participant's signed Informed Consent Form will be kept in a secure location with the researcher's documentation. The researcher and her university advisor are the only people who will have access to the data. The interview tapes and transcripts will be numbered to maintain the confidentiality of the participants. In the event of any report or publication from this study, your identity will not be disclosed. Results will be reported in a summarized manner in such a way that you cannot be identified.

### AUDIO OR VISUAL RECORDING

By initialing in the space provided, you verify that you have been told that audio recordings will be generated during the course of this study. The recordings will provide the researcher with a record of the interview that will be later transcribed, analyzed, and compared with other interview data, and with anonymous survey data. The recording will be identified as Interview Number 1, etc. If the participant is referred to by first name at any point during the recording, the participant's name will be replaced with Number 1, etc., during the transcription to protect the participant's identity. The researcher will transcribe the recordings. Only the researcher and her university advisor will have access to the recordings. This research is being completed to fulfill a requirement for a PhD in Education at Oregon State University. The recordings will be destroyed following the completion of the dissertation.

_____ Participant's initials

## VOLUNTARY PARTICIPATION

Taking part in this research study is voluntary. You may choose not to take part at all. If you agree to participate in this study, you may stop participating at any time. You may choose to skip any interview questions that you prefer not to answer. If you decide not to take part, or if you stop participating at any time, your decision will not result in any penalty or loss of benefits to which you may otherwise be entitled. Any data collected from you prior to your withdrawal from the study will be destroyed and will not be included in the study results.

**QUESTIONS**

Questions are encouraged.  If you have any questions about this research project, please contact: Willa M. Campbell at 503-502-6737 or willa.campbell@comcast.net or Chris Ward, at 541-737-1080 or chris.ward@oregonstate.edu.   If you have questions about your rights as a participant, please contact the Oregon State University Institutional Review Board (IRB) Human Protections Administrator, at 541-737-4933 or by e-mail at IRB@oregonstate.edu.

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Your signature indicates that this research study has been explained to you, that your questions have been answered, and that you agree to take part in this study.  You will receive a copy of this form.

Participant's Name (printed):
_____

_____          _____
(Signature of Participant)                                                      (Date)

There is a chance you may be contacted in the future to participate in an additional study related to this project.  If you would prefer not to be contacted, please let the researcher know at any time.

*RESEARCHER STATEMENT*

I have discussed the above points with the participant or, where appropriate, with the participant's legally authorized representative, using a translator when necessary.  It is my opinion that the participant understands the risks, benefits, and procedures involved with participation in this research study.

_____          _____
(Signature of Researcher)                                                      (Date)