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Attitudes of employers and high school teachers toward skills needed for the workplace

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ATTITUDES OF EMPLOYERS AND HIGH SCHOOL TEACHERS TOWARD SKILLS NEEDED FOR THE WORKPLACE

by

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DEDICATION

To my mother, Mrs. Tessie D. Bush, whose love and support have been with me all the way.

To my niece, Chimere Love, as a reminder that if you conceive and believe you really can achieve. Follow your dreams and make them come true.

And in loving memory of Keeta, the little joy of my life–my "baby", companion and best friend for 17 years, who departed this life three days prior to the presentation and defense of this study.

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INTRODUCTION

Background of the Study

Criticism of public education in the United States has been mounting during the past decade. Business and labor are questioning the ability of public education to prepare young people to perform in a global economy; to help U.S. industries regain a competitive edge, and to adapt quickly to new and emerging technologies (Illinois State Council on Vocational Education, 1991).

Educational reform movements of the 1980s focused on improving academic achievement of college-bound youth. Little attention was given to facilitating the transition of noncollege-bound youth to either school or work. However, more recent reports, such as The Forgotten Half (Parnell, 1988) and America's Choice (Commission on the Skills of the American Workforce, 1990) stress the need to overcome the disconnection between education and work.

Because of the inadequate preparation of youths for employment and the lack of assistance in helping them make the transition from school to work, many youth struggle in the labor market, are unemployed, or are in jobs that offer few, if any, opportunities for advancement. Currently, the average American 16 year old who has either dropped out of school or is merely attending classes in an unfocused school program, is working in a nonsignificant part-time job that is unrelated to a future career. These youths often succumb to the lure of making "real money", even though it is minimum wage, and they eventually drop out of school. After moving from one low paying job to another, they may eventually find steady employment, still at low wages, but by then they are well into their

twenties.

The typical high school program is designed for students planning to attend a four year college or university. But, as Parnell (1988) confirms, over 30% of high school students drop out before graduation. Only 50% of those remaining enroll in four year institutions and only half of them graduate with a baccalaureate degree. Therefore, the high school program is found useful for only one out of every five students (U.S. Department of Labor, as cited in Texas Higher Education Coordinating Board, 1995).

Workplace skills of students not planning to pursue a four-year degree are generally not addressed in any high school program. These students are generally guided by counselors to take a less rigorous route through school (Texas Higher Education Coordinating Board, 1995). Their academic courses are, therefore, minimally challenging and occupational skill development courses are also lacking. Neither the college-bound nor the non-college bound high school graduates are able to find decent wage jobs, although they are all expected to begin assuming some adult responsibilities or to help support themselves in some way (Texas Higher Education Coordinating Board, 1995).

For the majority of American students, what they learn in school is not clearly relevant to what they need to succeed after leaving high school. New programs are needed to help America's high school graduates gain an understanding of their skills, interests and limitations, as well as to prepare them to meet workplace standards. According to the National Governor's Association, "in the past, it was possible to tolerate a haphazard approach to school-to-work transition but today the waste in human potential that results no longer can be afforded (p. 22) " (Imel, 1991).

It is common knowledge that the workplace will be changing drastically in the 21st

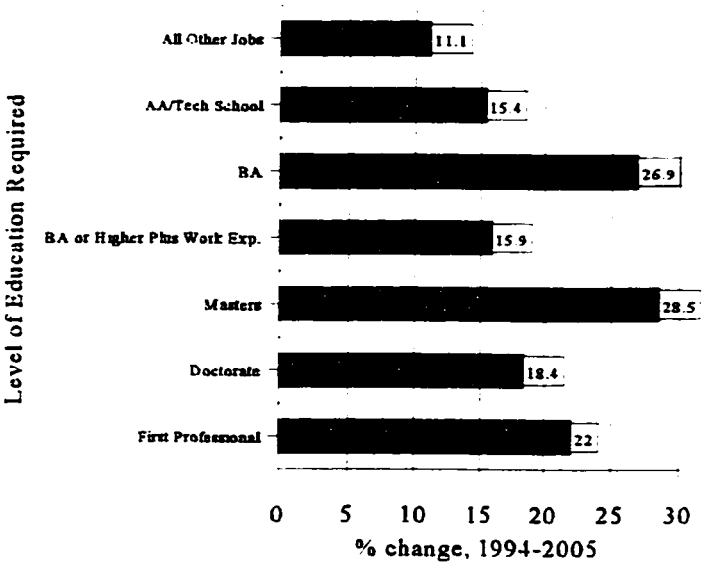
century. A U. S. Department of Labor report (as cited in Texas Higher Education Coordinating Board, 1995) estimates that by the year 2000 only 20 percent of jobs will require a four year degree. However, U. S. Bureau of Labor Statistics, Employment Outlook 1994-2005 and a study by John Bishop (as cited in National Alliance of Business, 1997, October) estimates that 60 percent of the job growth between 1990 and 2005 will occur in occupations requiring more education and training as shown in Figure 1. The remaining 80% or 40% of jobs will nevertheless be critical to our economy and to our future and will require a better foundation of academic skills than our high schools now provide. High school graduates will require some form of significant learning beyond the twelfth grade to be competent to perform in the workplace of the 21st century (U. S. Department of Labor, as cited in Texas Higher Education Coordinating Board, 1995).

In addition to the personal difficulties faced by individuals with low level occupational skills, a skill-deficient workforce hampers our nation's economic growth, productivity, and ability to compete in a global marketplace. While educational programs may be deficient in producing individuals who are workplace ready, business and industry must also share some of the responsibility for the failure of the non-college bound high school graduate. As a rule, employers have preferred to hire college dropouts in their mid 20's who have matured and have some work experience. According to the Commission of the American Workforce, 90% of employers surveyed ignore high school diplomas, believing graduates to be no better qualified than dropouts, and 98% never examine high school transcripts, believing the course work to be irrelevant to their needs (1990). The employer community is challenged to encourage schools to take a more applied approach to education and to add curriculum in the skills of communication, teamwork and

interpersonal relations (Carnevale, 1988).

Figure 1

Jobs In The Future Will Require More Education



Workforce Economics Trends (1997)

In an editorial nearly a decade ago, the Washington Post, followed by a report of the Commission on Work, Family and Citizenship, The Forgotten Half, highlighted the lack of support this nation gives to students making the transition from school to work, as well as the disparities in the earning power of the college and non-college bound (From School-to-Work, 1992). Projections of a decline in growth of the labor force and increasing demands for technologically literate workers will further exacerbate this problem into the next decade (Smith & Rojewski, 1992). The educational system is often blamed for poorly prepared workers, vocationally and academically, who are entering the workforce. On the other hand, educators complain that business leaders do not speak with a clear and consistent voice about what "better prepared" means (From School-to-Work, 1992; Wagner, 1993).

A research study conducted jointly by the American Society for Training and

Development and the U.S. Department of Labor in 1988 concluded that employers view basic skills – reading, writing, and computing as most essential for employees. However, employers most often complain about employee deficiencies in the following areas: problem solving, personal management and interpersonal skills. Seen as critical, according to this research, are the abilities to conceptualize, organize and verbalize thoughts, resolve conflicts and work in teams (Carnevale, 1988). Two years following this study, the National Center for Education and the Economy released the findings of its research in response to the question, "Is there a skills shortage?" Unlike the findings of the ASTD and U.S. Department of Labor project, employers had no major concerns with the basic academic skill levels of its employees. Instead, more than 80 percent of the employers surveyed responded that a good work ethic, reliability, good attitude, pleasant appearance and a good personality were of primary concern (1990).

A report by the Secretary's Commission on Achieving Necessary Skills (SCANS) defined the skills for effective job performance or workplace know-how (1991). The skills defined included basic skills, thinking skills, and personal qualities such as responsibility, integrity, and honesty. Five distinct competencies were also defined: using resources, working with others, acquiring information, understanding systems, and using technology. These skills are needed by all students, those going directly to work, as well as those planning further education (p. xv). They are generic or universal and apply to most jobs (SCANS, 1991). As a result of their study, the Commission came to three major conclusions:

- All American high school students must develop the aforementioned competencies and foundation skills if they are to enjoy productive and satisfying lives.

- Qualities of high performance must become the standard for the vast majority of our companies, large and small, local and global.
- American schools must be transformed into high performance organizations (SCANS, 1991).

A panel of business and industry officials who are members of the American Vocational Association's (AVA) School-to-Work Partnership Coalition were interviewed about the importance of employability or "soft" skills as opposed to technical or job specific skills. Although they represented many spectrums of business and labor, they spoke in one voice in affirming the findings of the SCANS research: Communication skills are the strongest "soft" skills that are needed by employees. Businesses are looking for people with the ability to work in teams, know how to manage conflict, and have the portable skills they can take from one place to another. Job specific skills are not that important because in a high tech industry job skills are shifting every six to nine months; therefore, employees are constantly being retooled. An employee with the basics of communications skills and a positive work attitude makes himself worth the investment in training ("Hiring Trends," 1997). Employers in the 21st century will expect an education system to prepare its graduates with the skills identified by SCANS (Packer, 1992). Clearly, educators and employers must work collaboratively to realize this common goal.

To be competitive in a global economy, America must develop a highly skilled, technical workforce. Educational reform should focus on aligning school-based learning with the needs of the workplace. School-based learning must be structured to make problem-solving and the social skills that young adults will need on the job central in all academic contents.

While teachers cite unrealistic demands from the business community and

increasingly unmotivated students as causes of their frustration, students in growing numbers, also express frustration with feelings of disconnectedness between what they are asked to learn in the classroom and the world of work (Wagner, 1993). They perceive school to be unrelated to their needs and interest and irrelevant to what is happening "in the real world." Teachers must find ways to motivate students and define what 18-year olds should know and be able to do to become productive, healthy adults in our society. To keep both students and teachers motivated to work in different ways requires schools and the business community to work collaboratively. School and the workplace must be equally perceived as learning sites and both must pursue congruent goals (Wagner, 1993).

Teachers are challenged to develop new skills in order to teach content that is in context of the world of work. They must develop collaborative learning environments, learn new pedagogical skills, and strive to get practical experience with the principles of the high performance workplace (SCANS, 1991). Teachers need to see how what they teach applies to the workplace so that the content is more relevant to our technological, information-based society and to the problem-solving and social skills that young adults will need on the job (Carnevale, 1988; Hess, 1997; O'Neil, 1995).

Staff Development Experiences

The SCANS Commission noted that public education will have to invest in change (1992). One of the most important investments must be devoted to staff development and teacher education. We are cautioned, however, that our traditional inservice-based, one-size-fits-all model of staff development for teachers has failed (Garmston, 1991; Joyce, Bennett, & Rolheiser-Bennett, 1990; Marczely, as cited in Licklider, 1997; McBride, 1994; Sparks, 1983). "Sit and get" sessions in which relatively passive

participants are "made aware" of the latest ideas regarding teaching and learning from so called experts will not do the job. A standards approach to staff development that include high-quality, on-going training programs with extensive follow-up and evaluation is recommended (NASSP, 1996). Teachers will need extensive assistance in developing the following:

- new pedagogical skills required to teach in context and to develop active, collaborative learning environments
- new instructional management skills needed to use the instructional technologies to find new ways of interacting with students
- knowledge and understanding of the principles of high performance as they are applied in restructured workplaces (SCANS, 1992).

Since the early 1980s, employer-sponsored teacher internships have become increasingly recognized as a reform strategy that improves teacher education by providing knowledge of the workplace. Teachers receive insight and direct experience related to one or more functions of a business organization, as well as the knowledge needed to teach new careers. Internships—also referred to as externships, field studies, practicums and job shadowing – are defined more precisely by time spent on the job and whether pay or credit is received.

Job Shadowing

Job shadowing provides an experimental learning activity normally designed to be a short-term, non-intrusive observation of individuals who are directly involved in the workplace. Teachers work and/or observe side by side with employees in the business environment. According to Gold (1981), benefits to both teachers and employers include the following:

- advisement on course selection and extracurricular activities that may help

students to achieve their career goals

- improvement in teacher competence and motivation
- stimulation to identify and correct problems related to instructional methods and content
- an opportunity for summer employment and real-world experience
- the overall improvement in quality of education in the community
- qualified employers in the workplace who are both reliable and task oriented during the summer months

Job shadowing is a growing trend for teachers within the setting selected for this study.

Curriculum Integration

The SCANS report recommends that when teachers have acquired knowledge of the high performance workplace, they will need to develop new pedagogical skills to present this knowledge in the educational curriculum (1991). Consistent with this recommendation, at the conclusion of a job shadowing experience, teachers are expected to develop lessons that will integrate their work-based knowledge into academic content.

Daggett, speaking of preparing students for the world of work, says that subject content must be presented in a rigorous, applied curriculum that forces students to have both rigor and relevance to the real world (O'Neil, 1995). One approach is through applied academics which presents curriculum in a way that integrates an academic discipline with a workforce application (Hull & Parnell, 1991, as cited in Michigan Council on Vocational Education, 1992). The curriculum is designed, therefore, in a way that related concepts, content, ideas, skills or processes are organized and presented so

that relationships or connections are made explicit to students and learning is reinforced.

The SCANS Commission recommended that integration of academics and workplace competencies should begin in kindergarten and continue through 12th grade, in all subjects – core curricular, extracurricular and vocational (1992). The advantages over the traditional departmentalized curriculum include the development of teacher collaboration and team building that result in learning experiences that focus on student needs, meets academic requirements, and links instruction to the real world (NASSP, 1997).

A strong staff development program to develop and implement curricular integration skills is needed, as many integrated curriculum designs are available for teachers (Fogarty, 1991; Grubb, 1991; Jacobs, 1989; Sizer, 1992). Curriculum integration and models of integration will be discussed further in this study.

Historical Perspectives

School improvement

Attempts to make schools better have come from different visions about what makes good education. These visions have been drawn from an array of educational models of organizing curriculum, instruction and use of educational technology. To understand how modern schools came into being and why we presently have certain educational alternatives within them, we first need to examine the early social visions that guided our schools and the various movements of reform (Joyce, Hersh, & McKibbon, 1987).

The common school. In the 1830s, the establishment of common schools began

gradually. States wanted to have literate citizens who would grow personally through education. Elementary schools were made available and all citizens were required to participate in the process of education (Joyce et al., 1987). By about 1870, half of the children in the United States were receiving some formal public secondary education. This marked the official establishment of the common school. Many attempts to establish a public school system within the framework of the Constitution had failed. State legislatures were left to establish legal structures for education within their own borders. Jefferson's efforts to establish a universal system of education for the state of Virginia in 1770 that would balance social privilege, education, and political and social opportunity remained unsuccessful for another one hundred years (Joyce et al., 1987).

The "common" school was designed to educate everyone in common. Education had previously been associated with high status and was the privilege of a selected few. From the beginning of the Renaissance era, scholars were used to tutor the children of the Renaissance Kings to prepare them for leadership. The common school was a Christian school, with Bible reading, praying and the singing of hymns included in the daily programs. Children were expected to be obedient and teachers were strict (Joyce et al., 1987).

The curriculum of the common school consisted of reading, writing, and arithmetic, which were thought of as useful skills for the simpler needs of citizens to perform industrial and commercial functions. Within 50 years, three-quarters of the White population had achieved functional literacy (Joyce et al., 1987)

Teachers were not professionally trained because little special training was needed. Content was simple and teaching methods were straightforward. Special places were set

aside to prepare people to teach. The teacher's role was to administer the common education, not create a unique and personal world of discovery for students (Joyce et al., 1987).

Models of education. Alvin Toffler (1970) argued in Future Shock that schools were modeled after the needs of an industrial society. His belief was that the institution of the school was created to resemble the factory life that would be the employ of most citizens. It taught people to take orders from others, work together under close supervision, and to perform monotonous, routine tasks that were regulated and graded. The early industrial society needed disciplined people who were willing to work long hours at intrinsically meaningless tasks (as cited in Joyce et al., 1987).

According to Apple (cited in Joyce et al., 1987), the American common school mirrored the industrial society in content and procedure, and reflected the status system that was prevalent in that time. Children of the more affluent received greater opportunities for education, and therefore received higher-salaried occupations. Contemporary critics viewed this system of education as a system for perpetuating the "corporate state" and the unequal division of wealth and power (Joyce et al., 1987).

Reform movements. Concerned citizens and educators began searching for ways to improve the common school and reform movements began to be generated around these ideas:

- best climate for mental and emotional growth
- normal, automatic ways of doing things
- effectiveness of punishment and competition
- differences in children and sameness in instructional strategies (Joyce et al., 1987)

Each reform era urged school improvement through achievement of important goals such as:

- expansionists attempted to broaden and equalize the opportunities for education to all children – economically disadvantaged, handicapped, women and minority races
- progressive social reformers focused on solving social problems rather than accepting the status quo
- academic reformers worked to achieve student self-realization by improving their independent thinking skills and their understanding of important bodies of knowledge
- personalist encouraged students to develop their own unique talents by making education more relevant to the needs of the individual. They believed in self-actualization
- performance-oriented argued that self-realization is a vague, unreliable dream until every student develops certain basic skills and competencies that included academic, social and vocational content (Joyce et al., 1987).

Joyce et al. (1987) stated that not one of the innovative reform movements has yet achieved its goal. Each has met resistance of one form or another and have often served as forces of resistance to each other. The real contribution of reform movements, says Joyce et al., is that each provides avenues which expand the diversity of educational experience. Together they enable us to select the options which appear to fit most closely the community and children of every school (1987).

In the early 1970s, a number of reports were issued that dealt with the shortcomings of the high school. According to Passow (1986), these reports were pretty much in agreement that:

- schools did not provide a complete environment for educating youth
- schools had failed to provide a comprehensive education
- schools had not provided effective education to work experiences

- schools could not provide adequate education for citizenship or in the arts
- schools were lacking in relevance and humaneness and had failed to provide curriculum and instruction that met students needs, interests and concerns

The recommendations called for drastic changes in curriculum, teaching, organization and functioning, climate, learning sites and in the relationships between the workplace and schools . . . (Passow, 1986).

By the 1980s, a flurry of reports continued to criticize public education in America, but the report getting the attention of most Americans was the 1984 report of the National Committee on Excellence in Education entitled "A Nation At Risk: The Imperative For Educational Reform." The reports agreed that American education was experiencing a crisis that could render the United States vulnerable to its industrial, commercial, and economic competitors unless the recommendations of reform are implemented (Passow, 1986).

Passow (1986) stated that efforts to improve education can be guided by the recommendations of national reform initiatives to stimulate change, but meaningful school improvement must involve change in knowledge, skills, attitudes, understanding and values of staff, in the organizational relationships of the school, in the climate and environment of the school, and in the transactions of teachers and learners. Sizer compared previous reforms to fine-tuning a Model T and states that lasting reform requires creating a climate for local educators and community members to develop their own strategies for improvement (O'Neil, 1995) .

Vocational Education

The purpose of this historical background is to provide a perspective of educational concepts that evolved from previous reform movements and the changing role

of the federal government in vocational education.

Miller (1993) defined vocational education as preparation for job or career skills (p.2). As such, a variety of components fall under the umbrella of vocational education: agriculture, business education, health occupations, home economics and industrial education (Miller, 1993).

Colonial America. The first organized form of vocational education was the apprenticeship. It became the most important method of education in the American colonies—people providing training for those who were dependent on them. Apprenticeships were either voluntary or compulsory. Voluntary apprentices chose their master and trade; compulsory apprentices were usually children of the poor. The master taught basic skills in addition to teaching a trade. Apprentices were sent to school if their masters could not teach the basics – reading, writing, and arithmetic. Girls were often taught housekeeping. Professions such as teaching, law, and medicine were also taught through apprenticeship, which made apprenticeship both training and education (Miller, 1993).

The first school to establish vocational and industrial education in America was the Franciscan Mission School in 1630. Franciscans offered instruction that combined education and work. Students learned basic skills until the age of nine. From age nine they learned carpentry and metalworking, masonry, tailoring and other skills. The most talented students became teachers and taught these skills to others. A new philosophy emerged that children should learn not only to think, but also to do—hence, education should consist largely of manual labor (Miller, 1993).

The Industrial Revolution. The Industrial Revolution created the need for a new

school curriculum by American educators and industrialists but for different reasons. Educators wanted to expand the scope of education, while businessmen wanted education to provide better trained employees. The Industrial Revolution brought an end to apprenticeship in America. Manual labor was replaced by machines and new methods of training were needed (McClure, Chrisman, & Mock, 1985).

Philosophy of vocational education at the turn of the century. Until the 1880s, academic and vocational or trade schools existed side by side with little interaction, joint programming or integration (Miller, 1993). By the beginning of the 20th century there was general agreement that vocational education should be taught and highly valued. There was disagreement, however, as to where and how vocational skills should be taught. The debated issue was, whether vocational education should be an integral part of the high school curriculum. Traditionalists argued that the inclusion of vocational education weakened efforts to achieve a cultural education and proposed that it be offered in a separate vocational high school (McClure et al., 1985).

John Dewey of the University of Chicago stated repeatedly that vocational education belonged in the general school curriculum. Dewey feared that a dual system would result in one school for traditional goals and one for obtaining a vocational education, resulting in a society that would consider one superior and the other inferior. Dewey advocated a comprehensive curriculum that provided both types of education in the same school (McClure et al., 1985).

The curriculum of the high school led to greater demand for vocational education in higher education. Higher education did not immediately embrace the philosophy of vocational education. However, for reasons of practicality and survival, higher education

emphasized the state of the arts technology and methods needed for the growth of vocational education. It has been argued that vocational education did more than any other constituency in establishing higher education (Miller, 1993).

Federal aid to education. Historically, federal legislation and funding have provided States with direction for addressing criticism of conditions in American education (Michigan Council for Vocational Education, 1992). Three major acts of legislation in support of public education in America during the nineteenth and twentieth centuries were the Morrill Acts, Smith-Hughes Act, and Carl Perkins I and II (McClure et al., 1985; Miller, 1993; Roberts, 1971):

Morrill Acts: 1862 and 1890. In 1857, Justin Morrill introduced a bill to donate federally owned public lands to the states, provided that each state would establish at least one college with a main course of instruction in agricultural and mechanical arts from any revenues received from sale of the land. The Morrill Act, signed into law in 1862 by President Abraham Lincoln, gave each state land-script in the amount of thirty thousand acres for each senator and representative it had in Congress (McClure et al., 1985).

In 1890, the second Morrill Act was passed, which provided a grant of $15,000 to be increased by $1,000 per year for ten years to states under the original act. It specified the subjects to be financed and required an annual report of how the money was spent. Noted contributions of the Morrill Act were: a) the concept of integrated academics was first identified, and b) the integration of vocational and academic curriculum (Miller, 1993).

The Smith-Hughes Act. Senator Hoke Smith and Congressman Dudley M. Hughes were co-sponsors of the Smith-Hughes Act, passed in 1917, which provided funds to

states for vocational education in agriculture, trade and industry, homemaking and for teacher education in these fields. States were to fund programs and states and local school districts would be reimbursed up to one-half their expenditure on a dollar to dollar basis (McClure et al., 1985; Roberts, 1975).

Funding and other conditions under the Smith-Hughes Legislation are highlighted below:

Initial allocations of $1,660,000 for the first year were increased to $7,167,000 in 1926. Funds were appropriated to pay salaries of teachers and for teacher training. A high priority was given to agriculture and funds were used to pay and train the directors and supervisors of agriculture programs. Similar positions in home economics, industrial and trade programs were not eligible for funding. Schools applying for funding were of three types:

- full-time vocational day schools for the purpose of employment
- part-time for those employed who received training in their field
- evening schools training those who could not attend part-time

Conditions and restrictions to state recipients included:

- public control of schools receiving funds
- guarantee of safety of funds allocated
- an audit and reporting system
- with-holding of funds if requirements of the Smith-Hughes Act were not met (McClure et al, 1985).

Smith-Hughes was amended several times. In 1917 it was amended to provide funds for the purchase of books and periodicals and for printing, binding and postage on foreign mail. In 1920 the Act was extended to Hawaii with an annual authorization of

$30,000 and in 1924 it was extended to Puerto Rico with $105,000 under the same terms and conditions that applied to the states (Roberts, 1971).

As stated by Roberts (1971), the Smith-Hughes Act was the only vocational education act that included an appropriation in the Act itself. All other vocational acts were authorizations. This means that a separate law carrying the appropriations was required before any money could be sent to states. The George-Reed, George-Ellzy and the George-Deen Acts, appropriations included in the Smith-Hughes Act, have continued throughout the years (Roberts, 1971).

Carl D. Perkins Vocational and Applied Technology Education Act, 1984. The original legislation signed in 1984 increased emphasis on services to special populations and program improvement (Michigan Council on Vocational Education, 1992).

Carl D. Perkins Vocational and Applied Technology Education Act, 1990. In recognition of emerging demands from the labor market, Congress enacted changes in vocational education by the reauthorization of the original Perkins Act as Perkins II. The new law enabled Congress to spend up to 1.6 billion dollars annually on programs that teach skills and competencies needed to work in a technologically advanced society. As cited by the Michigan Council on Vocational Education (1992), differences between the original Perkins I and Perkins II include:

- emphasizes the integration of academic and vocational education, encourages a broader purpose for vocational education as a method for developing academic and occupational skills;
- includes leadership and instructional programs in technology education;
- provides greater opportunities for the disadvantaged – requiring that the majority of funds to states be allocated to programs for the economically disadvantaged, handicapped, and limited English proficient;

- requires greater accountability of states for vocational programs through systems for monitoring and evaluation;
- establishes tech prep as a separate component to create partnerships between secondary and postsecondary institutions;
- encourages leadership from local school districts by requiring local spending plans.

Other Historical Initiatives of Vocational Education

The Vocational Education Act of 1963 provided services to people without respect to predetermined occupational groupings. This marked the first time in history that federal funds were used for construction of area vocational education school facilities.

The Vocational Education Amendments of 1968 and 1976 created national and state advisory boards; state plans, research programs, exemplary projects, work study programs, and supported curriculum development (Michigan Council on Vocational Education, 1992).

The Career Education Reform Movement, 1971-1981 was initiated in 1971 by Sidney Marland, U. S. Commissioner of Education, to incorporate more job awareness into the curricula. The goal was to help students to make career decisions and to have a saleable skill upon graduation from high school. Career education became a national legislative issue in 1977 with passing of the Career Education Incentive Act. According to Jennings (1983, as cited in Michigan Council on Vocational Education, 1992), this Act was intended to replace vocational education by providing young people with a better understanding of the world of work, better knowledge of the variety of careers that exist and the requirements of these careers, and better ability to make important decisions about their futures. Jennings viewed career education as a reform of vocational education. Some national leaders and policy makers felt that vocational education was too narrowly focused

and a "new" program labeled career education would appeal to more people and eliminate the perception of vocational education as a "dumping ground" for less academically successful students (as cited in Michigan Council on Vocational Education, 1992).

Federal support for career education ended with the election of Ronald Regan as President of the United States, who believed that the federal role in education should be very limited (Michigan Council on Vocational Education, 1992).

Purpose of the Study

The white-collar workplace of the 1990s requires not only mastery of "the basics," but also new kinds of skills. According to David Kearns, former head of Xerox, the average employee with the company for 20 years has changed jobs five to seven times. He asserted that the first skill needed by high school graduates is to be able to learn on their own. Kearns continued that employees must be able to work effectively in teams, and finally, they must be well-prepared workers who are able to solve problems and show initiative (Wagner, 1993). Educators too often spend more time teaching what they think is required to do well on standardized tests for college entrance and scarcely consider how to teach students critical workplace skills (Wagner, 1993).

Employers in the 21st century will expect the educational system to ensure that all graduates have the skills necessary to lead successful and rewarding lives. This accomplishment will require a commitment to educational change and a willingness to take action. The entire community must take part in the process – schools, large and small businesses; community and civic leaders, labor organizations, community-based organizations, parents, media, and state agencies. Schools must act on the belief that improving the match between what the workplace requires and what students learn

requires changing how and where students are taught. Learning must be allowed to take place in real-world contexts, as well as in schools. Communities must understand that redesigning schools around occupational skills for the workplace of the future demands more than simply changing the curriculum, it requires basic reform strategies that impact management, instruction, and assessment (SCANS, 1991).

New education goals are expected to create conditions for change if they have been developed in collaboration with the business community. With a consensus about what the goals of school reform should be, a framework can be established for making informed decisions about strategies and priorities (Wagner, 1993).

This study had several purposes:

1. To determine the perceptions of teachers and employers in a metropolitan community about the competencies and skills needed by high school graduates to be effective in the workplace of the future;
2. To determine points of agreement between these two stakeholders; and
3. To use the data to develop a framework to generate new philosophies of curriculum and instructional strategies at Walled Lake Central High School.

Statement of the Problem

Growing demand in the job market for broadly educated and highly skilled employees far exceed the number of students who are prepared to enter the workforce. However, there is considerable misunderstanding between educators and employers about what is meant by being prepared (From School-to- Work, 1992).

When employers criticize the educational preparation of the high school graduates they interview or hire they are assessing students in terms of the kinds of things they want them to do on the job. When these graduates were in high school their performance was

assessed on the learning tasks presented in school. These two areas of assessment rarely ever are compatible. On the one hand employers are looking for application of skills; educators, on the other hand, are often evaluating abstract or fixed concepts. The high school curriculum of the future must focus on new intellectual competencies and skills needed for personal growth. Teachers must find ways to connect curriculum to real-life and real-world situations so that learning is relevant and meaningful (Wagner, 1993).

The SCANS survey was used to determine if perceptions of high school teachers about what students should know to obtain and maintain jobs in today's society is congruent with what employers expect of entry-level employees. This study explored the relevance of evidence from professional development experiences in which some teachers have participated, such as job shadowing and in-services to develop an integrated curriculum, that can serve as an undergird for school improvement efforts, as well as the relationships between the school and the business community.

Responses of teachers and employers on the SCANS survey were compared to determine the areas of agreement between the two groups on the importance and frequency of using or teaching the identified skills. Areas of disagreement were identified and will be used to encourage the staff of Walled Lake Central High School to reform curriculum and instructional strategies so that gaps may be closed between workplace requirements and what students learn in school. Input and on-going dialogue with the business community will be crucial to this process.

Significance of the Study

This study should have special significance to the Superintendent, Board of Education members, teachers, parents, students, employers and others in communities

who are concerned with producing graduates capable of competing in a global economy. In the fall of 1997, the staff of Walled Lake Central High School was surveyed to determine goals for school improvement. One of the three goals selected was to prepare students for a successful transition from school to work. Specifically they stated, "Students will acquire competencies and skills needed to make a successful transition from school to work." Since teachers are responsible for teaching these competencies and skills, they must know what they are and how best to teach them. As indicated in Figure 2, the staff of Walled Lake Central High School is the only one of three high schools in the Walled Lake Consolidated School District who specifically made school-to-work transition a goal for school improvement. It is for these reasons that the staff of Walled Lake Central High School was selected to participate in this study.

Data from this study can help educators bridge the gap between employer needs and what is being taught. Schools can create educational programs designed in collaboration with the business community that prepare its graduates for success in the workplace, as citizens, and in their personal lives (SCANS, 1992). Schools will benefit by having teachers who are more motivated to teach, and students more motivated to learn because learning is more relevant to their lives. The results from this study will be used by the staff of Walled Lake Central High School as part of the baseline data needed in assessing the achievement of their goal for school improvement.

This study has implications for curriculum development, student performance, assessment, staff/professional development, teacher education, business and education partnerships, and school-community relations. The findings may be beneficial to anyone in the process of developing and implementing the school-based learning component of

school-to-work as a vehicle for school improvement.

Figure 2

High School Goals for School Improvement
Walled Lake Consolidated School District, 1997

School	Goals
Central High School	• Students will acquire competencies and skills needed to make a successful transition from school to work • Students will demonstrate an improvement in their ability to gather, process, and present information using technology across the curriculum. • Students will improve their writing skills in all areas of the curriculum
Community High School	• Students will improve their comprehensive mathematical reasoning abilities • Students will build and an improve expository reading comprehension across the curriculum
Western High School	• All students will demonstrate improvement in writing • All students will improve reading skills • All students will improve science learning

Limitations of the Study

This study is limited to high school teachers, counselors and classroom paraprofessional staff in one high school in the Walled Lake Consolidated School District. This high school was selected become of its commitment to school improvement through the following goal: Students will acquire competencies and skills needed to make a successful transition from school to work. As a result, the findings may not be generalized

beyond this high school. However, the methodology of the study may be generalized to the "sister" high school in this district where demographics and program offerings are the same, as well as to any public school district where demographics or properties of those in the population are the same. Other schools with a similar goal for school improvement may find the results to be interesting.

Research Questions

This research was guided by the following questions and hypotheses:

Questions:

1. Do teachers of identified disciplines have different perceptions of the importance of skills needed for the workplace?
2. Is there a difference in employer and teacher perceptions of the importance of skills needed for the workplace?
3. Do teachers who completed staff development experiences have different perceptions of the importance of skills needed for the workplace than those who did not complete these experiences?
4. Do employers of identified occupations have different perceptions of skills needed for the workplace?
5. Is there a difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace?
6. Is there a difference in the perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district?

Hypotheses:

Each hypothesis for this study was tested at the alpha level of .05:

$H_{(R)1}$. There is a statistically significant difference among teachers of identified disciplines in the perceptions of the importance of skills needed by students for the workplace.

$H_{(R)2}$. There is a statistically significant difference between the perceptions of employers and teachers of the importance of skills needed for the workplace.

$H_{(R)3}$ There is a statistically significant difference in the perceptions of teachers who completed staff development experiences and those who did not complete these experiences of the importance of skills needed for the workplace.

$H_{(R)4}$. There is a statistically significant difference in perceptions of employers of identified occupations of the importance of skills needed for the workplace.

$H_{(R)5}$. There is a statistically significant difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace.

$H_{(R)6}$. There is a statistically significant difference in perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district.

Definition of Terms

Attitudes

Attitudes are defined in three components: the cognitive, the affective and the behavioral. The "cognitive component" refers to a person's belief, ideas, and the way he or she sees things. The "affective component" refers to the way a person evaluates things, or how she feels about them. The "behavioral component" refers to whether a person is inclined to act upon his or her beliefs (Rosenthal & Rosnow, 1984). In this study, attitude is expressed by combining the importance (affective component) and the frequency (behavioral component) of teaching workplace competencies in secondary schools.

Competencies	Those activities and skills judged essential to perform the duties of a specific position.
Education	Organized and sustained instruction designed to communicate a combination of knowledge, skills and understanding, valuable for all the activities of life .
Internship	A formalized program that allows teachers to enter the workplace to observe and/or to work side-by side with persons in business/industry environments. For the purpose of this study, terms that may be used interchangeably for internship are externship, and job shadowing.
SCANS	Secretary's Commission on Achieving Necessary Skills. Commissioned by the Secretary of Labor in 1991 to study changes in the American workforce and implications of those changes for learning.
School to Work	A Federal Act passed by Congress and signed by President Bill Clinton in 1994 for the purpose of preparing all students for the world of work and/or post-secondary education.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

The following pages reflect a review of the literature which guided this research study. The topics that are covered in this review include: Preparing for the Changing Workplace, Education for Employment, Teacher Education, Staff Development and the History of Goals 2000. Under these headings additional topics are discussed to provide support for the need to develop consensus between educators and employers of skills taught in the classroom and skills needed in the workplace that will prepare students to live and work in the 21st Century. Underlying philosophies of teaching as well as strategies to develop school-based learning are also provided in this literature review.

Preparing For The Changing Workplace

Society's Climate/The Need for Change

While productivity growth over the past two decades has slowed to a crawl, the economy has continued to grow due to an increase in the number of people working rather than due to increased productivity, therefore causing a decline in earnings of the American worker (Commission on the Skills of the American Workforce, 1990).

Since 1969, real average weekly earnings have decreased by 12 percent. It now takes two working people in a family to make ends meet and the numbers of the working poor are rising (Commission on the Skills of the American Workforce, 1990).

According to Wirth (1993), by 1990 the richest 20% received over half of the nation's income and the top 5% received 26%--an all-time high in both instances. The

poorest fifth received only 3.7% of total income, down from 5.5% in 1970. The income of high school graduates declined by 12% between 1973 and 1987, while the number of full-time workers falling below the poverty line rose by 43% during the 1980's. These disparities in distribution of income have deepened the social division in America (Wirth, 1993).

Wirth (1993) viewed this deepening social division in part as a product of the impact of technology on work. The level of workers' incomes depends increasingly on the value placed on the skills needed in the workplace. These social divisions of the society are paralleled by similar divisions in the quality of schooling. Children from families with incomes in the top 20% do well. They attend private schools or privileged suburban public schools. Conversely, by the end of the 1980s, one-fourth of all American children under age 3 (and 44% of black children) lived in families below the poverty level, and as many as 30% of children in elementary and secondary schools are "disadvantaged" (Wirth, 1993).

In the face of such polarization, Wirth (1993) viewed American society as faced with a choice of two futures:

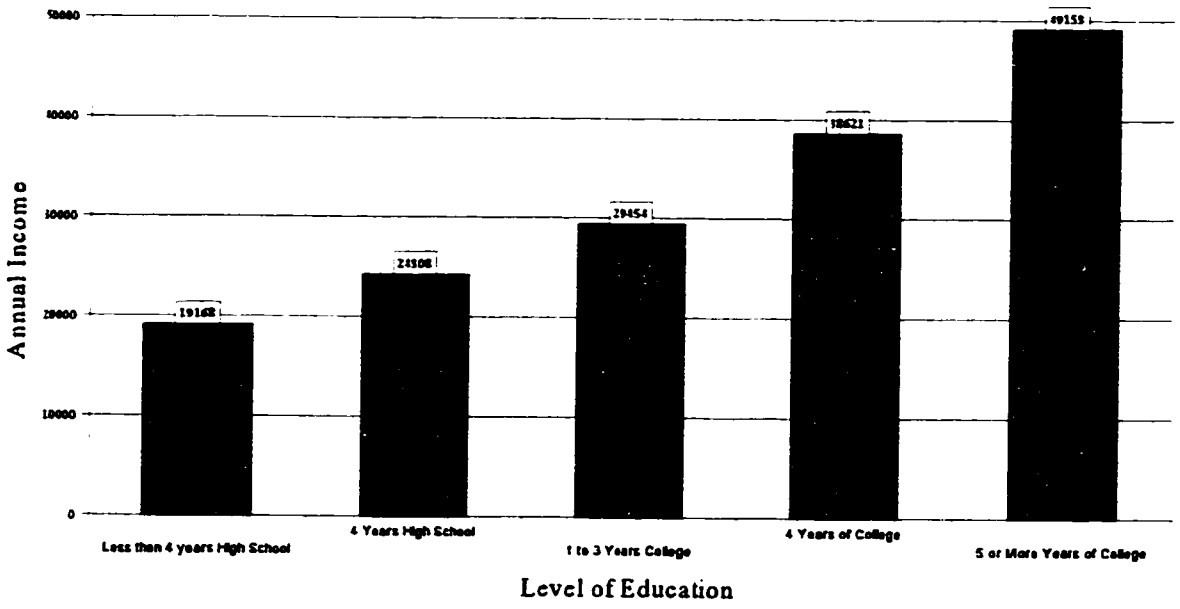
- *On the Present Path* – maintain a society wounded by class divisions and unequal access to learning, which could become increasingly troublesome. By the year 2020, the top fifth may well earn more than 60% of American income while the bottom fifth may drop to 2%. The well educated may live secure lives with excellent health care, challenging work, effective schools, global travel and electronic linkages. Conversely, the urban and rural poor will live in their decaying communities with the hopelessness of their children, thousands of them in prison.

- *The second choice* is to create a world-class economy in a democratic society by creating world-class schools.

Figure 3 shows recent earnings in the United States by level of education.

Figure 3

United States 1990 Earnings by Levels of Education



Source: U. S. Bureau of Labor Statistics

In a recent lecture, Daggett (1995) shared his views on schools and changes in society. He believes that America expects schools to solve the problems of society. Even

though we live in a technological information society pushed by global competition, Daggett viewed the American education system as still in the 1950s with the world outside of school changing four to five times faster than the world inside. He describes the third wave of school reform as stemming from the need to make graduates employable. Daggett pointed out that businesses have been pushing for school reform since 1983 due to the realization that math, science, and language arts needed in the business world are different from what is needed for college. He compares the American education system to the Asian system as "not better, just different ". "Americans emphasize theory, whereas the Asians emphasize application." Daggett gives a convincing example of the need to teach Americans how to apply knowledge by citing a list of American inventions that have been turned into marketable products in Asian countries. His closing comment during this lecture is "It's true, if you don't use it, you lose it. "

Wirth stated that if America is to ensure a more prosperous future, productivity must be improved. The drastic decline in rate of productivity during the 1980s was a catalyst for American work environments in the 1990s to change (Magaziner & Clinton, 1992 ; O'Neil, 1992; Wirth, 1992,1993). The focus of change is from the action-centered skills of physical production that characterized the industrial era to work marked by abstract intellective skills (1993).

With challenges in productivity from Japanese and German competitors, American leaders began to see the long-standing tradition of top-down, expert-controlled scientific management as the source of problems rather than the solution (Wirth, 1993). In the old industrial model, thinking was left to the hired hands. Today, to be competitive, thinking is required throughout the production process (O'Neil, 1992).

First Lady Hillary Rodham Clinton shared her concerns about the role of industry in restoring American competitiveness in the global marketplace and the need for change in the workplace (Magaziner & Clinton, 1992). Her perspective was that most American employers organize work in a way that does not require high skills; therefore, they foresee no shortage of people with such skills. She continued that most skill levels of Americans roughly match what is required of their jobs; however, to compete more competitively in a global economy, we must move to high performance organizations (Magaziner & Clinton , 1992). This assessment corroborates findings of the SCANS research (1991). Figure 4 was developed by the SCANS Commission (1991) and adapted from a chart by the Congressional Office of Technology Assessment. It contrasts the workplace of today – routine tasks, repetitive and organized along hierarchical lines, where mass production is emphasized and little thinking is needed to perform tasks which are later inspected by quality control – with the high performance workplace. The high performance workplace provides an environment that is problem oriented, flexible and organized in teams, where labor is not a cost but an investment. The high performance organization views a defective product as more costly than a high-quality one, and designs quality into the production rather than after-the-fact (SCANS, 1991).

Figure 4

Characteristics of Today's and Tomorrow's Workplace

Characteristics of Today's and Tomorrow's Workplace	
Traditional Model	High Performance Model
Strategy	
• mass production • long production runs • centralized control	• flexible production • customized production • decentralized control
Production	
• fixed automation • end-of-line quality control • fragmentation of tasks • authority vested in supervisor	• flexible automation • on-line quality control • work teams, multi-skilled workers • authority delegated to worker
Hiring and Human Resources	
• labor-management confrontation • minimal qualifications accepted • workers as a cost	• labor-management cooperation • screening for basic skills abilities • workforce as an investment
Job Ladders	
• internal labor market • advancement by seniority	• limited internal labor market • advancement by certified skills
Training	
• minimal for production workers • specialized for craft workers	• training sessions for everyone • broader skills sought

Source: Competing in the New International Economy (1990)

High performance organizations require the mobilization of skills of all workers, including those on the front-line. This can be done by reorganizing the way we work and by giving workers more responsibility, better education and training to perform more highly skilled jobs (Magaziner & Clinton, 1992).

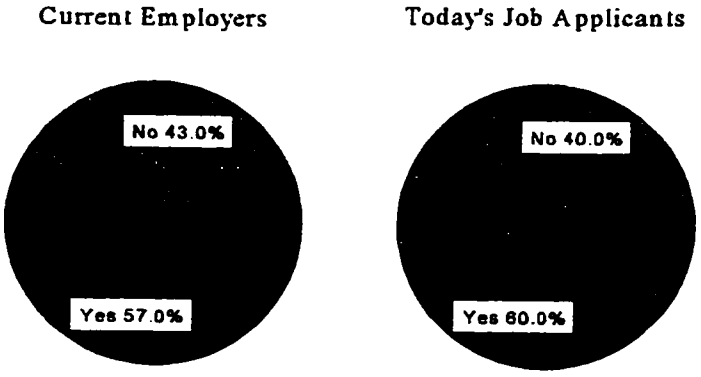
The Skills Employers Want

At the same time, the skills of the workforce and the skills needed might be diverging, according to a recent survey by Aon Consulting for the Society for Human Resource Management, as shown in Figure 5:

Wirth (1993) viewed the use of computer technology as the transformer of work in this generation which can be used to either de-skill or upgrade jobs. Some studies, according to Wirth (1993), show that the trend is toward upgrading. In contrast, however, The Report of The Commission on the Skills of the American Workforce (1990) reports that we are gradually, silently choosing to de-skill as reflected by many companies who cut wages to remain competitive.

Figure 5

Do Workforce Skills Match Job Demands?



Source: Society for Human Resource Management Wisdom, 1997 Survey of Human Resource Trends

Since release of the "Workforce 2000" report, leaders in business, education, and government have become increasingly aware of the problem of mismatch of skills to jobs. According to this study, America's workers are ill-equipped to meet employers' current needs, and ill-prepared for the needs of an approaching high technology, service-oriented future (Commission on the Skills of the American Workforce, 1990). The Commission surveyed employers across America to understand what businesses are doing, what their jobs required, and what employers expected of them that would likely change the future. This research revealed that the primary concern of more than 80 percent of employers surveyed was the quality of their applicants rather than the educational skills. Finding workers with a good work ethic and appropriate social behaviors (e.g., ' reliable,' 'a good attitude,' 'a pleasant appearance,' 'a good personality'). These skills should not be taken lightly because they are often listed by employers as requirements for meaningful employment (Commission on the Skills of the American Workforce, 1990).

Employer complaints, however, according to Carnevale, Gainer & Meltzer (1988), focus on serious deficiencies in areas such as problem solving, personal management, and interpersonal skills. The abilities to conceptualize, organize and verbalize thoughts, resolve conflicts, and work in teams are increasingly cited as critical. The basic skills employers want, and more, are described below:

- *The Foundation*: Knowing How To learn-- Competencies: Reading, Writing and Computation
- *Communication*: Listening and Oral Communication
- *Adaptability*: Creative Thinking and Problem-Solving
- *Personal Management*: Self Esteem, Goal Setting/Motivation, and Personal/Career Development

- *Group Effectiveness*: Interpersonal Skills, Negotiation and Teamwork
- *Influence*: Organizational Effectiveness and Leadership (Carnevale et al., 1988)

In a 1987 report, The National Alliance of Business called these skills that employers want the "Fourth R, Workforce Readiness Skills." These skills include thinking, reasoning, analytical, creative and problem-solving skills, as well as behaviors such as reliability, responsibility and responsiveness to change (From School To Work, 1990).

The SCANS research is the most far reaching study to date of employer needs in the high performance workplace (SCANS, 1991). For one year, 31 members of the SCANS Commissioners (representing education, business, labor, and state government) and the SCANS staff and research team talked with employers, managers, and front-line workers in a wide range of U. S. businesses about the skills their employers need and the skills workers use on their jobs. The most disturbing finding of the SCANS report is that more than half of American graduates leave school without the knowledge or foundation required to find and hold good jobs (as cited in Packer, 1992). Both groups related to the Commissioners that good jobs depend on people who can put knowledge to work (Packer, 1992).

Education for Employment

The role of the school

Wirth (1992) cited a 1985 report by the Committee for Economic Development (CED) entitled Investing in Our Children: Business and the Public Schools which grew out of concern for American survival in global competition. According to Wirth, this project on education followed a major CED study of American productivity which concluded that

economic productivity and the quality of education cannot be separated. Studies by the committee of Asian and European competitors demonstrated that human resources are more important than physical ones, and a work force educated by "old school basics" will not meet challenges of change in the 21st century (Wirth, 1992).

Using the example of Proctor and Gamble and its participative work system, Wirth (1992) made the point that even though training and re-training is provided in the high-level skills, training is only effective if employees have strong literary and numbers skills, and above all the ability to learn. With this concept of work, the CED issued a call for "nothing less than a revolution in the role of the teacher and the management of schools" (Wirth, 1992).

Dewey (1916) contributed significantly to the concept of educating for the purpose of self-realization. Early in the twentieth century education was stressed for responsibility – to God, country, home, and job. According to Goodlad (1979), Cremin paraphrased Dewey's definition of education – the reconstruction or reorganization of experience – as a way of saying that the aim of education was not merely to make citizens, or workers or parents, but to make human beings who would live life to the fullest. Basic schooling, compulsory school for all, must prepare all individuals for continuation of learning in adult life, during working years and beyond, by teaching the skills and motivating the minds to be actively engaged in the learning (Adler, 1982).

Employers are worried that American schools and colleges are not preparing young people for the workplace. A nationwide survey by the U. S. Department of Education found that employers look at job applicants' attitudes, behaviors and work experience more often than they do school evaluations and grades ("Young Workers

Unprepared," 1995). Henry (1994) cited a question from a high school principal during the annual shareholder's meeting of the BellSouth Corporation as evidence of the low level of public awareness of the work preparedness issue. The question asked of the Chairman of BellSouth by a high school principal was, "What is it that BellSouth expects us to teach kids?" In the discussion that followed about workforce preparedness, the comments and responses to questions were recorded electronically and displayed in chart form. Figure 6 illustrates the questions, the correct responses (with sources of information) and all responses with the percentage of each.

Figure 6

Responses To Questions Asked In Regards to Workforce Readiness

Question	Response Categories	Percent*
At what age do those with a high school diploma enter the primary work force? (Source: Transition from High School to the Workplace, State of Louisiana Department of Education, 1992)	Age 18 Age 21 Age 23 Age 27**	13 25 39 29
What percent of today's young people graduate from high school with a general track diploma? (Source: U. S. Department of Education, National Center for Education Statistics, 93-423, April, 1993)	10% 30% 40% 60%**	2 19 39 40
What percent of business executives say they cannot modernize their equipment because their workers do not have the appropriate skills? (Source: A Competitiveness Strategy for America, U. S. Competitiveness Policy Council, 1993)	10% 20% 40%** 60%	0 18 51 31
What percent of high school students in America work more than 20 hours a week? (Source: The 1993 Assessment in Reading, Mathematics and Science ETS, 1993)	5% 20%** 35% 50%	8 27 45 19

*Percentages do not add up to 100% due to variance in number of participants responding to question.
** Correct Response

Unless students in this country are better prepared to enter a changing workplace,

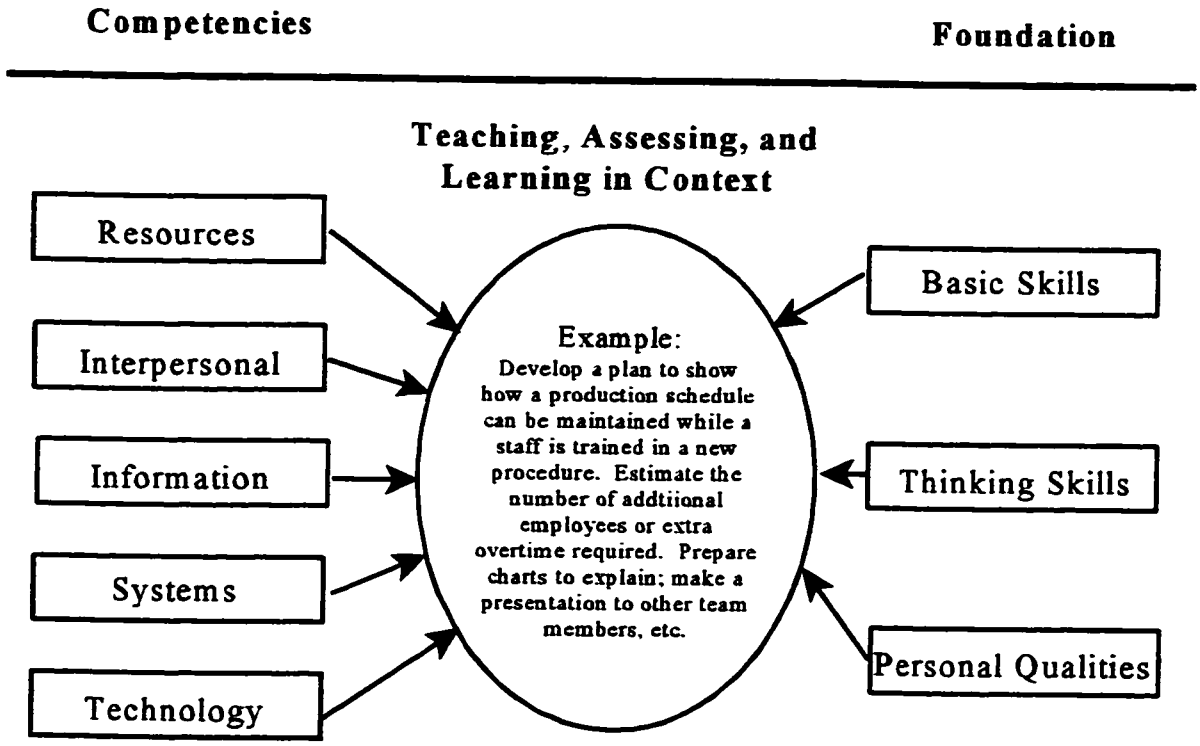
the financial future for high school graduates, and the economy as a whole, is likely to become a bleak one as the 21st century approaches (O'Neil, 1992). Experts on the economy as well as those in education continue to be worried by the gap in capabilities of high school graduates, especially those who do not plan to enter college, and the skills, knowledge, and attitudes which employers expect in entry level applicants A report by the U. S. Department of Labor indicated that more than half of high school graduates leave school without knowledge or foundation skills needed to find and maintain a good job (O'Neil, 1992). A Harris poll found that only one-third of employers thought that recent high school graduates showed the ability to read and understand verbal and written instructions, and only one-fourth indicated they were capable of performing simple math functions. Personnel officers at some of America's biggest firms say that the time needed for the application process has almost doubled due to the screening needed to find qualified candidates for entry-level jobs (O'Neil, 1992). Short-comings in the skills of entry-level workers have come at a time when Americans are struggling to compete in a global economy, where thinking is needed to problem solve, knowledge of complex tools and technologies is needed, and workers must understand their role within the "system" of the workplace (O'Neil, 1992).

Today's schools must develop new standards, curricula, teaching methods and materials. Just as business must become high performance organizations, so must the schools (SCANS, 1991). The SCANS "know-how" (foundation and competencies) must be integrated in the five core subjects (history, geography, science, English, and mathematics), as well as in the other subjects and extracurricular activities, and never taught in isolation. Students need practice in the application of these skills. The SCANS

philosophy is that teachers and schools must begin to provide this type of integration early so that students understand the relationship between what they study and its application in real-world contexts. Students should find course content more relevant and teachers should find students in their classes more attentive and interested. Employers should be delighted with the results because the curriculum is tied to real things in the real world (SCANS, 1991). Figure 7 illustrates what work requires of schools – that learning in order "to know" must not be separated from learning in order "to do."

Figure 7

Workplace Know-How: What Work Requires of Schools



Knowledge and its uses belong together (SCANS, 1991). Schools prepare people to make a living – to live full lives, to participate in their communities, to raise families and to enjoy the leisure that is the fruit of their labor. Figure 8 shows the Characteristics of Today's and Tomorrow's Schools (SCANS, 1991).

Figure 8

Characteristics of Today's and Tomorrow's Schools

Schools of Today	Schools of Tomorrow
Strategy	
• Focus on development of basic skills • Testing separate from teaching	• Focus on development of thinking skills • Assessment integral to teaching
Learning Environment	
• Recitation and recall from short term memory • Students work as individuals • Hierarchically sequenced – basics before higher order	• Students actively construct knowledge for themselves • Cooperative problem solving • Skills learned in context of real problems
Management	
• Supervision by administration	• Learner-centered, teacher directed
Outcome	
• Only some students learn to think	• All students learn to think

Focus of the SCANS (1991) study is in the role that schools play in making sure that young people are prepared for the world of work as an important part of their education. The SCANS committee suggested that educators must instill in students the perspective on results that the SCANS skills demand. This can be accomplished by telling students what the standards are, establishing a fair and firm assessment of where students are and what they need to do, and by integrating the SCANS competencies and foundation skills into every aspect of the school curriculum. SCANS says this know-how is needed by

all students--from the most gifted and talented to those experiencing great difficulty in the classroom (1991).

Employers in the 21st Century will expect an education system that can assure that all of its graduates have the skills identified by SCANS. According to Packer (1992), the Los Angeles Unified School District is already moving in this direction.

The School Curriculum

A curriculum that combines rigor and relevance is the ticket to success for students entering today's competitive job market, says Daggett. Does today's high school curriculum prepare kids for the world in which they are going to live? Daggett does not think so. Below are excerpts from a recent interview with Daggett conducted by John O'Neal:

> The curriculum of the 1950's was developed primarily for the purposes of building intellectual character and transmission of culture. Even though the typical math and/or science curriculum of the 1950's hasn't changed in schools today, the world in which we live has changed drastically. In order to compete in a global economy, Daggett continues, we must be able to compete against high skills because we are not able to compete against low wages in other nations. The problem is that we are not high skilled in the new jobs because our graduates are functually illiterate.
>
> Our educational system is almost wholly oriented to the college bound. We provide very little for the majority of youth in this nation who do not go on to a four year college. Even so, only one in five students obtain a college degree. Those who are not college bound are usually placed in a general track which provides neither strong academic skills nor strong vocational skills. The vocational students don't have the academic rigor they need in science and language arts content, and the college prep students don't have the ability to apply the theoretical curriculum they have received. The solution is to provide a single curriculum for all students that is both rigorous and relevant. Schools must address application, and must make content more relevant to our technological information based society--more laboratory based in a real-life sense. Therefore we don't need less theory or content, just application of the present academic curriculum. A rigorous applied curriculum, says Daggett, forces all children

> to have both rigor and relevance. Schools should not have different curriculums for different students; they should vary the instructional strategies according to students' different interests, learning styles and aptitudes (O'Neal, 1995).

Curriculum Reform. Perspectives vary on how to improve the high school curriculum. Reform reports, according to Plihal, Johnson, Bentley, Morgaine, and Liang (1992), advocated a common curriculum with relatively few electives and no ability grouping; however, there is no agreement on what subjects should be included. Adler (1982) encouraged a common curriculum based almost entirely on academic subjects while Goodlad (1984) recommended the inclusion of vocational education. Current response to the quest for curriculum reform is one that advocates integration of vocational and academic education (Plihal et al., 1992).

Curriculum integration referred to the process of uniting parts or elements of a student's educational experience to form a more inclusive whole. The organization by discipline most commonly used in secondary and postsecondary schools leads to knowledge, skills, and information taught in isolation from their authentic use (Plihal et al., 1992). An applied curriculum was based on problems and student learning actually found in real-life situations (Paris, 1995). Tyler (1949) inferred that "students are much more likely to apply their learning when there is similarity between situations encountered in life and situations in which the learning took place."

When teachings in the classroom are based on what happens in the "real" world, students can more easily understand the relevance of what they are learning and are more likely to put forth more effort. Glasser (1969) commenting on relevance and its relationship to school failure, stated the following:

> When relevance is absent from the curriculum, children do not gain

> motivation to learn. As more complex studies come along in later years of school, subjects that only motivated students can master, the children stand still – and they fail. I suggest, therefore, that the teaching of relevance itself be part of education (pp. 49 and 54).

Models of Curriculum Integration

Applied academics can be defined as the presentation of subject matter in a way that integrates a particular academic discipline such as mathematics, science or English, with personal workforce applications--hands on laboratories dealing with practical equipment and devices (Hull & Parnell, 1991).

The applied teaching/learning approach moves from authentic application, which has meaning for students based on their own experiences or is derived from the experience of the teacher to the abstract and theoretical. This approach is supported by brain research and what we know about how the human mind functions (Gardner, 1983).

The SCANS (1991) report argued that learning in order "to know" should not be separate from learning in order "to do". The two can be combined by teaching "in context", which is learning content while solving real-life problems. Contextual learning is another term for the concept of applied learning. Hull (1993) stated the following:

> According to contextual learning theory, learning occurs when students (learners) process new information or knowledge in such a way that it makes sense to them in their frame of reference (their own inner world, memory, experience and response). This approach to learning and teaching assumes that the mind naturally seeks meaning in content--that is, in the environment where the person is located . . . (p. 41).

The application of contextual learning was first proposed to American classrooms by Dewey, who advocated a curriculum and teaching methodology tied to experiences and interest of the learner. Dewey was not an advocate of education separated for mind and body (vocation and academic), and therefore deplored school programs labeled as

academic and vocational/occupational tracks (Dewey, 1973).

Integration of academics is a strategy for designing academic curriculum (English, math, science, etc.) in a way that related concepts, content, ideas, skills or processes are organized and presented so that relationships or connections are made explicit to students and learning is reinforced (Fogarty, 1991). Fogarty classified 10 ways to integrate curriculum. A description of each classification is found in Appendix A. The goal of integration is to provide a substantial and meaningful experience for students. Integration takes place in the minds of the learner. The role of educators is to maximize the opportunities for students to make connections by the way curriculum is planned, organized and delivered (Paris, 1995).

Integration of academic and vocational education. When additional knowledge and skill is included in vocational courses and more application to life and work is included in academic courses, student learning is enhanced. Integration of academic and vocational education involves using vocational education settings to reinforce and apply academic skills and content (Pritz, 1988). When integrated, academic education becomes more life-relevant, career-focused, and more hands-on; with vocational education becoming more academically rigorous and less narrowly focused on preparing students for specific jobs. Pritz (1988) cited the following concepts that are supported by research:

- Academic basic skills are embedded in vocational tasks.
- Vocational tasks provide for realistic use of academic basic skills.
- Neither academic basic skills nor vocational tasks should be taught in isolation from each other.
- Differences in learning styles and teaching styles may have a significant impact on students' success in applying basic skills.

The literature reviewed on integration often referred to the work of Grubb, Davis,

Lum, Plihal and Morgaine (1991) as the most complete description of this broad concept which may be operationalized in a variety of ways. Their work represents findings of a study sponsored by the National Center for Research in Vocational Education (NCRVE) at the University of California at Berkeley. The models were classified following their observations of integration activities in several different schools. The lessons shared by Grubb et al. (1991) are:

1. There are many approaches to integrating vocational and academic education rather than a single model that could apply to all schools; and,
2. It would be misguided to impose a single model or for educators to decide upon one "best approach" .

A description of each model is found in Appendix A.

Ultimately, integration of vocational and academic education will require changes in the organization of schools, instructional methods and approaches to curriculum (Plihal et al., 1992).

The Role of the Community

According to John Murphy, Superintendent of Schools in North Carolina (1993), people learn best when the community in which they live signals in everyday ways that learning is valuable. Turner (1988) viewed greater community involvement in the school as an essential ingredient of effective management, high level student performance, and even one's credibility as an educator. Turner states, "Schools can no longer close their doors on their surroundings – they are expected to help meet the total needs of both their students and their communities" (1988),

According to Packer (1992), communities that want to be active participants in their schools make sure that young people are ready for the world of work by forming a

strong link between their schools and employers. The disconnection between schools and their employers is evidenced by the fact that high school teachers are familiar with the entrance requirements for college, but few know what is needed to succeed at work.

A study conducted by Wagner (1994), a noted consultant to more than a dozen school improvement efforts in public and independent schools, concluded that if teachers and students are going to be motivated to work in different ways and if the schools are to cultivate long-term support for on-going change, there must first be consensus within the community about the goals of school reform and about the best ways to measure progress toward those goals. Wagner stated, "Goals will not create conditions for change if they have been developed by educators in isolation from the community." He recommended the following venues in developing a broad-based consensus between schools and communities:

- *Synthesize information from diverse sources about what high school graduates need to know and be able to do.* Wagner recommended readings and reports about skills 18 year olds need in our society such as: a) America's Choice: High Skills or Low Wages, National Center on Education and the Economy, and b) What Work Requires of Schools, Secretary's Commission on Achieving Necessary Skills (Wagner, 1993).

- *Town meetings and media campaigns* – "reality checks" – discussions of how much can be taught in 4 years. What the priorities are and implications for new teaching strategies —curriculum cannot do it all – teach all the workplace skills that business leaders want, cover content-specific materials decided by experts, prepare students to be competent citizens and parents, and provide students opportunities to pursue their interests and perform community service. Also discuss assessment —how goals are being met.

These decisions should be made by citizens in local communities, not the federal government, says Wagner (1993).

- *Task forces that include community leaders, parents, educators and students to develop a widely shared understanding of what a high school diploma should mean* —the kinds of skills and knowledge that all students might be

able to master and how they would be best assessed (Wagner, 1993).

Wagner says a broad consensus with education and community creates a shared understanding of new education goals that makes school reform much more possible. New teaching strategies and different kinds of partnerships flourish. Teachers are motivated to work in teams, priorities for the school budget will be easier to determine, and public support will be more readily sustained. There will be a more rationale framework for considering alternate schedules and restructuring the teacher's work day. Finally, Wagner points out, new or improved models for school/business partnerships and other services that better meet the needs of students and the community can be developed (Wagner, 1993, 1994).

Business and Education Partnerships

Dolainski (1997) writes that today's high school graduates enter the workforce ill prepared and it is no longer feasible for businesses to stand idly by. To ensure the successful transition from school to the workplace, employers must play a more active role in partnership with schools and communities.

In a recent school-to-work survey of employer participation, the Institute for Educational Leadership found that over 75% of employers acknowledged that they were motivated by an interest in performing a community service. However, most employers acknowledged the importance of a relationship with education that provides an economic benefit. Changes in the economy in response to international competition and development of new technologies have made success of an industry even more dependent on the skills of its workers creating a better link between education and training, productivity, and the corporation's bottom line (U.S. Department of Education, 1996). A crucial element of

building employer involvement in partnership with education is to convince them that the skills and ability of students will help them to compete in the global economy (U.S. Department of Education, 1996).

To ensure a competent future workforce, businesses must partner with schools, communities and government to reform America's process of education. The goal of these partnerships, stated by Dolainski (1997), is to ensure that the nation's young people learn what they need while in school to successfully make the transition from the classroom to the workplace and are able to be lifelong learners.

Initiatives intended to build school-business partnerships such as businesses adopting schools, business people as mentors in schools, and other more developed school-to-work-programs were initiated following reports and reform movements in the 1980s that brought to light the unpreparedness of high school graduates entering the workforce (Grant, 1966).

In many ways, the American business and educational communities are intimate strangers. Employers have sat on educational advisory boards for years, frequently encouraged to do no more than rubber stamp the educator's agenda. Schools, edgy, perhaps, that big business will try to stick its nose in the classroom and run the whole show, often solicit the patronage of business, but not its partnership (Dolainski, 1997). People in the business world see their role as helping schools to re-evaluate their mission and determine who their customers are—which is the community, and that includes business. The business community is portrayed by Badway (as cited in Dolainski, 1997) as the only place that can demand accountability from schools as a basis for their involvement.

Dolainski suggested that teachers need to see the relevancy of school to the future of students in the working world (1997). Unfortunately, most teachers don't know much about the world of work outside the walls of the classroom. Dolainski cited examples of partnerships between New Orleans public high schools and a consortium of financial institutions that created teacher-orientation sessions and workplace seminars. He states that job shadowing or other work related experiences provided by the consortium have been successful in giving teachers insight to how what they teach in the classroom is relevant to the workplace. Traditionally these experiences have occurred during the summer months prior to the beginning of the school year. With so much lag time, a new approach was initiated in New Orleans to provide the opportunity for teams of teachers to leave school for a day of work once a month at one of the business partners in the consortium (Dolainski, 1997). Dolainski inferred these teacher-orientation sessions ultimately promote new-found respect among educators and employers which is key to a partnership. The bottom line for employers is that somewhere down the road graduates come to jobs with the skills and attitudes needed to become successful and productive employees (Dolainski, 1977).

A study of business and labor in 1991 by the Illinois State Council on Vocational Education found that business and labor are willing to assist education in preparing a world-class workforce. Businesses want a concise, clear message about what they are being asked to do, and they expect a report of their efforts. The findings of this study concluded through partnerships with education, business and industry can do the following:

- Establish business advisory groups to advise on industry skill standards,

- Support classroom instruction and career counseling by providing volunteer personnel and other resources,
- Support work-based learning options to ease transition from school to work,
- Support upgrading teachers through internships or summer jobs, and
- Expand access to quality vocational education through apprenticeship programs.

Also of significance to employers is that partnerships with education improve community relations. Community involvement is viewed as good business practice. Through partnerships, employers receive the satisfaction not only of their interaction with young people and contribution to their educational development, but also benefitting from an improved educational system and a positive image projected throughout the community (U.S. Department of Education, 1996).

Strategies for recruiting employer partnerships include the following:

1. *Provide a wide range of opportunities for involvement.* Employers consistently report that a wide range of well-defined roles and responsibilities encourage their participation. Employers prefer choices and are discouraged by being channeled into prescribed activities (U.S. Department of Education, 1996).

2. *Foster employer ownership.* Employer participation on advisory boards and in developing skill standards, curriculum, and assessment tools provides businesses with a sense of "ownership" of a school-to-work system. Business involvement in school-to-work ensures that programs are responsive to the needs of industry, that skill standards are current with high performance workplaces and technology, and that students can find jobs in their chosen field (U.S. Department of Education, 1996).

Teacher Education

In previous sections of this writing a review of the literature has focused on America's decline in economic competitiveness, a slow down in the growth of productivity and unpreparedness of workers for a workplace which increasingly demands

knowledge of high technology and basic skills. Critics of American education say that this is to some extent because teachers don't know how to teach and point to the failings of teachers and to shortcomings in the process by which they are trained (LaBaree, 1994).

As stated in the "Report of the National Commission on Teaching and America's Future", "The bottom line is there is just no way to create good schools without good teachers" (1996). As a result of the 1983 study, "A Nation At Risk," educators have learned that most schools and teachers cannot produce the kinds of learning demanded by the new reformers because they do not know how, and the systems in which they work do not support them in doing so (Commission on Teaching and America's Future, 1996). Most states and school districts have not yet put in place standards and curriculum frameworks that provide clear signals about the kinds of academic learning they value. They provide few opportunities for principals and teachers to learn how to redesign their organizations and curriculum to be more effective. Most current educators were prepared years ago through programs that did not envision the kinds of challenges schools now confront and did not have access to the knowledge about teaching and learning available today (Commission on Teaching and America's Future, 1996).

The Commission on Teaching and America's Future states that current reforms have created new expectations for teachers that most have not been prepared to meet. To help diverse learners master a more challenging content, teachers must go far beyond dispensing information, giving a test and assigning a grade. Teachers are required to know more about the foundations of subject areas, and they must understand how students think as well as what they know in order to create experiences that produce learning. Our society must now develop a teaching force that is diverse, well-prepared, and culturally

responsive that can serve as a foundation for the schools' need to maintain a prosperous and just society (1996).

A number of possible solutions to the dilemma of teacher preparedness have been discussed by politicians and policy makers at all levels. Among them, according to LaBaree (1994), are testing students as they leave teacher education programs, extending and upgrading the content of programs, and bypassing teacher education programs altogether through alternative certification. LaBaree says the latter option, placing people directly in classrooms with subject-matter expertise or practical occupational experience, is viewed by some as protection from the corrupting influence of schools of education. He says academics in the more prestigious colleges within American universities ridicule the curriculum of schools of education for what they consider its mindlessness and uselessness. Journalist, Rita Kramer, became a critic of schools of education after sitting in teacher education classrooms and interviewing education professors. After her experience Kramer wrote a book entitled: Ed School Follies: The Miseducation of America's Teachers, in which she concluded that much was wrong with the nation's schools and traced the problem back to ways in which teachers were trained (Lucas, 1997; LaBaree, 1994). Kramer repeated a familiar refrain, teacher preparation programs were turning out "experts in methods of teaching with nothing to apply those methods to." Kramer, commenting about the ability of teachers to bring enthusiasm to student learning, stated "nowhere in America is intellectual life deader than in our schools—unless it is in our schools of education." (Lucas, 1997).

The history of educational programs dating back to the 1800s established the intent that they should be accessible and relatively undemanding, as well as to provide

general learning for students who had no intention of teaching. What students and parents wanted in many cases was a route to middle class status, not specialized training for a single vocation (LaBaree, 1994). This resulted in multipurpose high schools or liberal arts schools, and later to general-purpose public universities. Pressure to provide social mobility forced teacher education to be modest in the demands it placed on students in order not to block access to the degrees they sought (LaBaree, 1994).

LaBaree views these same demands as undermining efforts today to strengthen teacher education programs. He sees everything urging toward thin coverage of subject matter and pedagogy, keeping programs short and unintrusive, allowing entry to nearly everyone, making the process easy, and graduation certain while doing it all on the cheap. LaBaree points to the readiness of teacher education programs to circumvent their structures and turn to alternatives when teacher shortages are acute as an example of how little popular toleration and support strong teacher-training programs enjoy (1994).

Efforts in Reform

In the early 1980s colleges of education were criticized for a lack of academic rigor and a failure to remain relevant as teaching demands grew (Cornett, 1995). According to Lucas (1997), most teacher preparation programs observed by Clark and Astuto of New York University continued to be undergraduate degree programs with little space or time for intense professional preparation, and little commitment of resources and energy to teacher education. They attribute a lack of consensus within society at large about teaching and teachers (Lucas, 1997).

According to Lucas (1997), Beyer of Knox College offered an alternative explanation for why reform in teacher education has come so slowly. Beyer's view is that

a teacher education program has not been developed that would lead to both academic and professional studies or to a model based on technical rationality and vocationalism. Beyer emphasizes that in planning reform, an institution's local "microcontent" of competing and vested interests must always be taken into account in estimating prospects for success.

Carnegie Forum on Education and the Economy

Critics of teacher education dating back to the early 1900s began their call to extend teacher preparatory programs or to move programs to the postgraduate level (Lucas, 1997). In the 1980s with a new succession of national studies and reports calling for systemic changes in teacher education, two groups were prominent in criticizing traditional programs. A task force of the Carnegie Forum on Education and the Economy led off with a strong endorsement for making the bachelor's degree a prerequisite for entry into a teacher education program. In A Nation Prepared: Teachers for the 21st Century, the Forum's Task Force on Teaching as a Profession made several recommendations: a system of differentiated staffing in schools headed by "lead" teachers, the development of expanded curricula in graduate schools of education, abolition of the traditional four-year undergraduate version of teacher preparation, and the creation of a vigorous Master's in Teaching degree as an entry-level credential for beginning teachers (Lucas, 1997).

Holmes Group

The Holmes Group (originally an informal network of education deans that evolved into a formal consortium of professors within research-oriented universities) released the first of three publications a year following the Carnegie study. The agenda of

the Holmes Group in its first publication, Tomorrow's Teachers, says Lucas (1997) was for the reform of teacher education simultaneously with the teaching profession at large. Lucas enunciates their five basic goals:

1. To improve the intellectual preparation of teachers;
2. To acknowledge and institutionalize differences in teacher's skills, knowledge and commitment to career;
3. To create entry standards for teaching that would be "professionally relevant and intellectually defensible";
4. To link institutions of higher education more closely with schools;
5. To make schools better places for teachers to work and learn.

In its second publication, Tomorrow's Schools, the Holmes Group outlined its design in great detail for the concept of professional development schools. The Professional Development School is today a promising model of new teacher education practices according to Dodd (1996). The needs of both novice and experienced teachers are served by combing teacher education with professional development and school restructuring efforts. They create new frames for learning such as opportunities for learning by teaching, by doing and by collaborating. These opportunities exist for beginning teachers, teacher educators, and veteran teachers as well (Darling-Hammond, 1994).

In Professional Development Schools (PDS) experienced teachers serve as models and mentors for interns and as teacher leaders. There is "no one best model" because universities and colleges as well as public schools are different. One PDS model described by Dodd (1996) is the Southern Maine Extended Teacher Program (ETEP). This one-year graduate program has several school sites. Interns are assigned to one site for the entire

year where they combine student teaching with course work, which is offered at the school site. Some teachers work for both the school and the university.

Graduates of the ETEP program after teaching for one or two years have demonstrated leadership in their schools or professional organizations. In the state of Michigan, models of PDS are prominent at Michigan State University (LaBaree, 1994).

The third publication of the Holmes Group, Tomorrow's Schools of Education, reiterated support for extended programs of teacher preparation with special training sites as discussed in their previous publications. To achieve its goals the Holmes Group proposed a two-year, postgraduate master's degree program following a four-year baccalaureate, or as an alternative, inaugurating the Masters in Teaching degree proposed by the Carnegie Forum (Lucas, 1997).

Common to both groups was a recommendation for the creation of a career ladder for teachers and graduated salary increments. The Carnegie Forum proposed the creation of a National Board for Professional Teaching Standards from which two different certificates would be issued – one for entry-level teachers and an advanced certificate for "lead teachers" of proven experience and leadership potential (Lucas, 1997). The Holmes Group proposed three certifications: initial "instructor" (for beginners), "career professional" (for those completing a six-year certification program) and "career professional teacher" (for those completing doctoral level study) (Lucas, 1997). The Forum advocated major responsibility of school practitioners in developing national professional standards for teaching, while the Holmes Group clearly favored top-down leadership and direction from university-based teacher educators, termed "emissaries from higher education" (Lucas, 1997).

Reaction and responses to proposals from the Carnegie and Holmes reports include much criticism and lack of support. The assessment by Darling-Hammond (1994) is that faculty in schools and colleges involved with teacher education have little knowledge of the Holmes Group's reform agenda. She states while the professional development school model has gained acceptance within reform models such as the Holmes Group, the RAND Corporation, the Coalition of Essential Schools and the National Board for Professional Teaching Standards there is little evidence of grassroots support from public schools. The Southern Regional Education Board agreed with the general findings of the Carnegie Foundation and the Holmes Group. However, according to Cornett (1995), the Board's overall position in response to their goals is that "it makes no sense to add a fifth floor to a four-story house if the foundation is shaky."

Goodlad Project

One of the most widely discussed studies of schools and American teacher education toward the end of the twentieth century, according to Lucas (1997), was spearheaded by Goodlad (1985), director of the Center for Educational Renewal at the University of Washington, Seattle. The intent of the Center's "Study of the Education of Educators", says Lucas (1997), was threefold: to undertake a "comprehensive study of the conditions and circumstances of educating educators for the nation's schools", to review preparatory programs in other professions as "models" for teacher education; and to examine "the development of school-university partnerships for dual purposes of improving schools and the education of those who work in them.

After completing a thorough examination of 29 programs in eight different states, Lucas (1997) stated that Goodlad and his associates concluded that few programs were

infused with any coherent sense of mission or a vision of the basic purpose of schooling.

One of Goodlad's most vocal critics was Chester Finn, director of the Washington-based Education Excellence Network (Lucas, 1997). Finn was an advocate for school-based programs, alternative certification routes, and apprenticeship arrangements that would match a novice teacher with a skilled classroom veteran for the purpose of mentoring and development. He did not subscribe (as did Goodlad) to the notions that as an undergraduate one must prepare for a lifetime commitment to the teaching profession, that the university is the only legitimate route into that profession, that one learns most of what one needs to know about education from professors, and that the academy is itself the source of change and improvement in education, and teaching particularly. Finn, says Lucas, regarded the Center's analysis as little more than "a learned blast from the past."

Goodlad's response to Finn and other critics was that the ills of teacher education run deeper and are far more complex than problems with the curriculum. His position was that a cure would not be achieved by agreement on a remedial curriculum package, even though renewal of curriculum must be a central component of any reform while retaining his optimism for the future of teacher education and support for genuine systemic change (Lucas, 1997).

A Plan for Action

Teacher educators are increasingly required to prepare teachers with a better understanding of education and employment. Grant (1996) cites an example of the Wisconsin Department of Public Instruction as mandating students in an initial teacher education program to have licensure credits in the area of education for employment.

While the issues of teacher education continue to be debated by communities,

government and professional and scientific groups, this review concludes with a brief overview of recommendations and a plan of action from one such group.

According to Kaplan (1996), in 1993 the Association of Teacher Educators (ATE) created five commissions and charged them to grapple with many of the aforementioned issues directly influencing present and future directions in teacher education. ATE and the American Association of Colleges for Teacher Education (AACTE), supported in part by the U.S. Department of Education's Office of Educational Research and Improvement, brought together a congress of many stakeholders in the preparation of the American teaching force.

The outcomes of the Congress were summarized and synthesized by Kaplan and Edelfelt (1996) into the following plan of action:

- State and regional units of ATE and AACTE to sponsor their own congress using the input and the process developed for the National Congress
- ATE and AACTE should introduce a broad collaboration with many other agencies and stakeholders in the education of teachers, i.e., business, industry, parents, teachers, communities and other professional associations to develop consensus on such topics as quality standards for teachers and institutions that produce teachers, licensure and certification, and improved teaching that improves teaching results
- Each state or region should establish a set of principles, practices and ideas that offer further insight into the decisions that move the profession of teaching
- Individuals, institutions, states and regions are encouraged to produce more action research to support best practice theory. ATE and AACTE will document best practices recommended by the congress
- ATE and AACTE communicate the best practices, significant accomplishments, important research findings, etc., to the media and the general public.
- ATE and AACTE must reach out for encouragement and support of future teachers' teaching and students' learning.

They must seek in the hundreds of thousands of dollars for school reform and improvement. In order for these action plans to succeed, Kaplan (1996) advocates a rethinking of old paradigms and more meeting of minds and agendas on common interest and commitment by all stakeholders in the preparation of teachers. He concluded each initiative must be coordinated by a collaborative council to maintain the integrity of each agency or participating organization.

Staff Development

School reform agendas leading to the 21st century cite the one essential ingredient to its success dependent upon teachers acquiring the skills, perspectives and knowledge necessary to transform the learning of students. Effective professional development depends on its structure, process and content (Licklider, (1997).

The professional development (used interchangeably in this writing with the term staff development) of educators can no longer rely on "early outs" several times a year or "inservice days", says Licklider (1997), with faculties sitting through sessions wondering what to do. Change in what we expect from teachers requires changes in teachers' learning. Teachers need to be able to see that what they learn produces results in their classrooms and that it enables them to improve the lives of their students (Licklider, 1997). Licklider discusses effective staff development through a synthesis of research. Below are highlights of her discussion:

- Effective staff development should include multiple sessions over an extended period of time to allow participants to confront new knowledge and skills (Sparks, 1983, Joyce and Showers, 1988; Butler, 1989).
- Effective programs expand learning that takes place in regular settings with assignments to be completed between regular sessions that allow participants to practice, reflect, discuss and receive feedback about new strategies or the application of knowledge (Butler, 1989).

- Educators, to risk change, must have opportunities to practice, experiment and analyze learning in non-threatening environments (Butler, 1989). Administrative support is essential (Sparks, 1983; Licklider, 1986; Butler, 1989).

Paris (1995) acknowledges the influence of high school educators and their lifelong affect on the lives of students. She provides the following recommendations applicable to the kinds of teaching and learning today's teachers are expected to pursue:

1. Activities should include on-site experiences in contemporary work sites or forums on changes taking place in American workplaces. All teachers should spend time in the workplace, observing the skills and knowledge requirements and planning to integrate these into their courses. This workplace experience should be followed up with individual reflection (written reports, video or other media), formal sharing with other teachers and curriculum revision.

2. The know-how to make curriculum more authentic can also be learned in professional development activities. Applied and integrated curriculum often requires the involvement of business and community input into the design of student learning experiences that are based on authentic activities actually carried out in the workplace.

3. Teamwork skills will be essential for teachers who are accustomed to working in isolation and who will now work collegially to integrate curriculum, team teach or infuse the curriculum with authentic applications for the workplace.

4. Professional development must also include continuous improvement tools for working in collaboration, problem-solving, and accountability essential for educators, parents, business and community groups who are creating new teaching and learning systems.

5. Professional development should include training in the elimination of sexual and racial harassment in the classroom and in the workplace. It should also include training for all stakeholders in career development for women and men in nontraditional occupations.

Licklider (1997) noted that the active role of participants in its planning is important to the success of staff development.

History of Goals 2000

Introduction

Following "A Nation at Risk" and other studies in the early 1980s about the Nation's economic future, a tidal wave of school reform promised to renew American education. The consensus of congress was that too many students were achieving at levels lower than needed for them to succeed in the modern economy. Thus, the third wave of school reform stems from the need to make graduates employable.

The Goals 2000: Educate America Act (P.L. 103-227) was signed into law by President Bill Clinton on March 31, 1994. In doing so, Clinton stated, "The most important task of government is to help our people raise their education and skill levels so they can make the most of their own lives ... Our children deserve our best efforts to give them a shot at the American dream " (U. S. Department of Education, 1995, p.4). The primary goal of the Act is to encourage local community-based actions to meet educational needs, help more students to achieve higher standards, increase parent participation and improve teaching (U.S. Department of Education, 1995, p.7).

Unveiled as a strategy to improve public education in America by then President George Bush with leadership from then Governor Bill Clinton, this Act was originally introduced in 1991 as America 2000. According to Yang (1993), Bush, in an attempt to make good on his 1988 campaign vow "to be the Education President," began a year prior to his bid for re-election by establishing goals to ensure that by the year 2000, all American children have adequate preschool programs, meet basic competency requirements in core subjects, rank first in the world in math and science achievement, attend drug free schools, are literate and have a high school graduation rate of 90%.

Bush proposed to accomplish these goals by revamping performance standards of

schools, creating different schools for more diverse students, providing opportunities to those already in the work force for continued study to upgrade job skills and/or further their education, and encouraging more parental involvement in schools (Yang, 1993). The original cost to the federal government was about $820 million of the Education Department's 27.1 billion dollar budget for the first fiscal year (Yang, 1993).

Goals 2000 went even further in an effort to ensure that all students reach their full potential. It is based on the premise that students will reach higher levels of achievement when more is expected of them. In addition to the six original educational goals established by Bush, President Clinton added the goals that encouraged professional development of teachers and parental participation in schools (Paris, 1995).

According to Paris, with an appropriation from Congress of $105 billion in its first fiscal year, Goals 2000 funds systemic reforms at the state and local levels and is intended to provide frameworks within which to organize all state and federally funded educational programs by:

- Codifying into law eight National Education Goals.
- Adopting national performance standards in such areas as science, math, and other core curricular subjects and supporting local efforts to meet those standards.
- Strengthening and improving teacher training, instructional materials, technologies and other school services to enable students to achieve higher goals.
- Establishing a National Skill Standards Board to promote the development of occupational skill standards so that Americans are better trained and internationally competitive.
- Increasing flexibility at the state and local level by waiving rules and regulations that might impede reform and improvement (Brustein & Mahler, 1994).
- Passage of Goals 2000 began a new era in the role of the federal government in

its support for Education through a comprehensive approach that helps all students succeed academically.

Upgrading Teacher Education and Professional Development

Improving student performance depends on the ability of teachers to teach challenging subject matter to all students, and to manage effectively in an orderly learning environment. Under guidelines of Goal #4, professional development is intended to mean "the rigorous and relevant strategies and organizational supports that insure the career-long development of teachers and other educators." (National Education Goals Panel, 1995). Under provisions of Goals 2000, school districts are awarded funds for the development of reform plans, and for improving professional development opportunities for prospective and current teachers (United States Department of Education, 1995).

Increasing Community Involvement in Education

At the heart of Goals 2000 is the grant program for the development and implementation of long-term comprehensive school improvements. Communities are being supported in their efforts to improve all aspects of education including use of better assessments, professional development and the effective use of related education and training initiatives to improve student achievement (United States Department of Education, 1994, p. 7). Students simply learn more when there is parental and community involvement in learning. Schools need to open their doors for community involvement in the design and implementation of school improvement efforts (United States Department of Education, 1994, p. 3).

Secretary's Commission on Achieving Necessary Skills

In a letter to parents, employers and educators, the Secretary of Labor and the Secretary's Commission on Achieving Necessary Skills (SCANS) introduced its report of an initial examination of changes in the workplace and the implication of those changes for learning. The Commission was established following the call from President George Bush for World Class Standards for educational performance and a new educational strategy, "America 2000" , which preceded "Goals 2000" (SCANS, 1991). The Commission acknowledged the importance that schools prepare people to make a living--to live full lives, to participate in their communities, to raise families and to enjoy the fruit of their labor. SCANS' focus is not intended as a mandate to narrowly focus education for work.

SCANS began its work in 1990 under the tenure of Elizabeth Dole as Secretary of Labor. It was the job of 31 Commissioners representing education, business, labor and state government to ensure that the goals to achieve Bush's legacy were achieved. Specifically, they were charged to determine the level of skills needed for entry-level employment and whether our young people are capable of meeting these demands. In carrying out the charge they were asked to:

- Define the skills needed for employment;
- Propose acceptable levels of proficiency
- Suggest effective ways to assess proficiency; and
- Develop a dissemination strategy for schools, businesses and homes (SCANS, 1991).

Commissioners met with employers, managers and front-line workers and talked about the skills workers use on their jobs. All groups responded that good jobs depend on

people who can put knowledge to work. Employers and employees share the belief that workers must "work smarter" (SCANS, 1991). As a result, three main conclusions were formed:

1. American high schools must develop new competencies and foundation skills in order to prepare students to live productive and satisfying lives.

2. All companies regardless of size must set standards of high performance– a commitment to excellence, product quality, and customer satisfaction.

3. The nation's schools must demonstrate a commitment to high performance by producing skilled graduates as the norm (SCANS, 1991).

To prepare all students, both those going directly to work as well as those planning further education, the Commission identified five competencies together with a three-part foundation of skills and personal qualities as essential to their education. These eight components are highly integrated and job tasks often require several in use at the same time. SCANS refers to them as workplace "know how" in Figure 9.

Figure 9

Workplace Know-How

The know-how identified by SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance.

Competencies – effective workers can productively use:

- *Resources* – allocating time, money, materials, space, and staff;
- *Interpersonal Skills* – working on teams, teaching others, serving customers, leading negotiating, and working well with people from culturally diverse backgrounds
- *Information* – acquiring and evaluating data, organizing and maintaining files, interpreting and communicating, and using computers to process information
- *Systems* – Understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems
- *Technology* – selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies

The Foundation – competence requires:

- *Basic Skills* – reading, writing, arithmetic and mathematics, speaking, and listening;
- *Thinking Skills* – thinking creatively, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn, and reasoning;
- *Personal Qualities* – individual responsibility, self-esteem, sociability, self-management, and integrity.

The SCANS report made the following recommendations to American schools and workplaces to incorporate the SCANS vision as a demonstration of their commitment to World Class Standards:

- Employers must include this workplace know-how as part of the employment process.
- Employees should be screened or tested for these skills prior to employment or employers should invest in their training as a condition for hire.
- Employers should communicate clearly with educators what is needed and work with them in accomplishing it.
- The business community must begin the process by confirming that the

> SCANS skills reflect local workforce requirements and make sure that the local school board is aware of their needs for use in instructional planning (SCANS, 1991).

The efforts of President Bush in 1991 to accomplish the goals of America 2000 focused in four directions, one of which was to reinvent schools for tomorrow's students. A follow-up to the initial SCANS study, Learning a Living, recommended that workplace "know how" can be taught in reinvented schools by integrating it into the curriculum, when teaching is done in context with real-world experiences and by providing teachers with the tools and resources they need (1992). Teaching skills in context means placing students within real environments rather than have them learn in abstract what they will later be expected to apply. If real environments are not available, schools should provide real-life simulations (e.g., problems or projects related to work situations, as well as internships, mentorships, and job shadowing).

Workplace job skills are not used in isolation from each other in the workplace and effective performance often requires many different skills used in combination. In its final report, "Teaching The SCANS Competencies," the Commission provided an example of integration of SCANS competencies into core academic subjects as shown in Appendix A.

The Commission further stated that reinventing schools must begin with a willingness to change. To implement the SCANS agenda requires a redesign of American education beginning with curriculum and instructional reform. It may also require a new delivery system such as school-based management, shared decision making and new measures of assessment. The following conditions are recommended to schools and communities seeking to implement the SCANS agenda:

- A commitment to change and a willingness to take action from both the school and the community.

- Participation from all stakeholders – schools, businesses, labor organizations, parents, students, media, community and civic leaders and state agencies. Opportunities for learning in real-world contexts.

- The understanding that to design schools round learning skills requires not only changes in curriculum but also changes in management, instruction and assessment.

- New assessment strategies that are compatible with instructional strategies used in delivering the SCANS know-how so that instruction and learning are enhanced (SCANS, 1992).

School-To-Work-Transition

Shortly after Goals 2000 established a framework to improve education in America, President Bill Clinton signed into law on May 5, 1994, the School-to-Work Opportunities Act of 1994 (P.L. 103-239). This was in response to the problem of too many young people leaving high school without the academic and occupational skills needed to succeed in the workplace or postsecondary education. Although models are different in each community, the basic principles of high standards-- staying in school, linking work and learning, and employment and careers should exist (Paris, 1995).

School-to-work programs must have three basic components: work-based learning, school-based learning and connecting activities. Lyon (1994) identified exemplary school-to-work programs as those which also focus on strategies for organization, staff development and evaluation. A description of the basic components is given below:

Work-based learning. Students receive training at a work site and learn broad, transferable skills as well as general workplace and employment skills. Training is planned so that it may lead to high-wage, high skilled jobs. Upon completion, students should

receive an industry-accepted skill certificate. Work experience may be paid or unpaid and student learning is assessed (Lyon, 1994).

School-based Learning. Classroom activities and projects should directly relate to the work-based component and should be integrated along with academic and technical skills. Lyon (1994) inferred that the key to accomplishing this goal is a strong career guidance component beginning in the elementary grades. She continued that schools must bury their "turfism" and focus on developing one comprehensive, seamless system that benefits all.

Connecting Activities. The connecting activities of a school-to-work program include:

1. matching students with the work-based learning opportunities of employers;
2. proving a school site mentor to act as a liaison among the student, employer and the school;
3. providing technical assistance and services to employers in designing school-based learning components, work-based learning components, counseling and case management services; and training teachers, workplace mentors, school site mentors and counselors.
4. providing assistance to schools and employers to integrate school-based and work-based learning and integrate academic and occupational learning into the program;
5. encouraging the active participation of employers with local educators in implementing school-to-work activities;
6. assessment and evaluation of school-to-work programs;
7. linking youth development activities with employer and industry strategies that upgrade skills of their workers (Paris, 1995).

School-to-work models. Four school-to work models frequently used are described below by Paris (1995) and Partee (1995): These models have demonstrated varying

degrees of success and are recommended to schools and communities that are planning to implement a school-to-work system that best meets their needs:

Youth apprenticeships combine academic and occupational course work with training in the workplace, working side-by-side with a mentor who is a skilled worker. This model emphasizes structured learning experiences in the workplace more than any other model and typically lasts two years. Youth apprentices are paid and receive instruction in all aspects of the industry, based on industry-wide occupational standards. Youth apprentices receive certificates of occupational competency upon completion of training. Employers play a central role in the design and management of the youth apprenticeship model.

Tech Prep was cited in the School-to-Work Opportunities Act of 1994 but was first funded in the Carl D. Perkins Act of 1990 ((P.L. 101-392). The idea is to "articulate" a sequence of courses over a four year period (or more) to prepare students for a range of occupational choices within one industry. The Act (Sec. 344(b) specified that Tech Prep programs:

- Be carried out under an articulation agreement between participants in a consortium; and
- Consists of 2 (amended to 4) years of secondary school prior to high school graduation and 2 years of higher education, or an apprenticeship program of at least 2 years following graduation, with a common core of required proficiency in mathematics, science, communications, and technologies that may lead to an associates degree in a specified career field.
- Provide a career path for high skilled technical occupations by linking secondary and post-secondary education and integrating academic and occupational learning.
- Provide opportunities for direct entry into the workplace or continuation with further education leading to an advanced degree.

Other elements of tech prep under Sec 344(b) include curriculum development, education for teachers and counselors, equal access to technical programs for special populations and services to meet their needs, and preparatory services for all participants.

Paris (1995) cites the following ways by which Tech Prep strengthens school-to-work systems:

- strengthening the involvement of employers in curriculum development, work experience and hiring of graduates;
- incorporating skill standards that are nationally recognized;
- providing professional development opportunities for educators;
- improving career guidance and counseling programs.

A Career Academy is often a school within a larger high school, where a group of students and a team of teachers stay together for a block of time (several hours) each day and often remain together for several years. Teachers from core academic subjects and one career subject design lessons that integrate academic and vocational content. California used this model in the 1980s to create about 50 "Partnership Academies." Each academy is organized around an occupation such as health, electronics or finance. Students work in that industry during the summer after their junior year and serve internships during the second semester of their senior year, thereby limiting the job placement and career building opportunities for students. Bailey and Merritt (1993, as cited in Paris, 1995) found the lack of classroom and worksite integration a disadvantage of this model. However, businesses provide mentors, workshops, part-time and full-time jobs with career potential when students graduate from high school.

Cooperative education, commonly referred to as co-op, is the most available model of work-based education which targets approximately 8% of the nation's

"non-college bound" high school students in school-to-work programs, as reported by the U.S. General Accounting Office in 1991 (as cited in Paris, 1995). Typically, students spend one year in a co-op program which provides on-the-job training that relates to the student's area of vocational study under a training agreement between the school and the employer. Employers supervise students at the worksite, and in turn, school coordinators (usually vocational teachers) monitor employers to see that training objectives are met (Paris, 1995).

Co-op programs have received criticism for lack of quality and structure (Bailey & Merritt cited in Paris, 1995; Partee, 1995). However, a 1991 study by the U.S. General Accounting Office (cited in Paris, 1995) found that quality and effectiveness is determined in part by the perceived quality of the program. Those programs which are viewed as second-rate do less well and attract fewer students than those seen as having high quality.

Eight Principles of Effective School-To-Work Programs

In its 1995 report, "Goals 2000: Building Bridges From School To Work," the United States Department of Education identified the following eight principles commonly found successful in communities having school-to-work programs and recommends these principles to communities seeking to build high-quality bridges and career paths for their students:

1. *Business as a major player.* Paul Barton of the Educational Testing Service related his study of school-to-work transition for 25 years. He shared his strongest conviction that a collaborative approach between the school and its employers is key. This means business and industry as equal partners sitting across the table at work toward

achieving mutual goals. Barton's conviction is shared by the U. S. Department of Labor in making the following statement:

> Employers contribute job-related criteria for inclusion in classroom curriculum. They provide on-the-job training, tours, presentations, practice job interviews, . . . funding, mentors, supervisors, equipment, supplies, community contacts . . . and of course--part-time and permanent jobs at non-subsidized wages.

A conclusion reached by Barton is that behind every school to work effort there are committed business people because they know that well-prepared employees are indispensable to the high-performance work organizations employers are striving to become.

2. *Community colleges in a pivotal role.* As stated in U. S. Bureau of Labor Statistics, Employment Outlook 1994-2005 (as cited in National Alliance of Business, 1997) jobs requiring an associate degree or higher will account for nearly 45% of jobs expected to be created. At minimum, community colleges provide training and education beyond high school. Working with secondary schools and business partners in a consortium, community colleges help to develop work-based competencies and "teaching modules" that combine academic and career learning. They may also provide learning opportunities for teachers. The Portland Area Vocational Technical Education Consortium (PAVTEC) consisting of Portland Community College and 13 school districts is a consortium model which began in 1986 that has been emulated in many other states.

3. *High standards for all students.* Low expectations beget low performance. It is safe to say no community wants low performance for any of its children. One way to discourage low expectations is by eliminating tracking (U. S. Department of Education, 1994, p. 6). A study by the Southern Regional Education Board found that eliminating

tracking in core academic subjects did not significantly effect failure rates. On the other hand, the study found that the dropout rate declined significantly from 23% in 1986-1987 to 12.6% in 1990-1991.

National standards may be used to raise expectations for all students. Academic standards are what students need to know and be able to do. Goals 2000 established a National Education Standards and Improvement Council to develop voluntary national education standards. The National Council of Teachers of Mathematics (NCTM) has developed standards and the Department of Education is providing funding to develop standards for the arts, civics and government, English, economics, foreign languages, geography, history, language arts, and science that will identify what all students should know and be able to do to live and work in the 21st century (Paris, 1995, p. 14; U. S. Department of Education, 1994, p. 6).

The Goals 2000: Educate America Act also created the National Skill Standards Board to oversee the development of a voluntary national system of skill or occupational standards for American industries (Paris, 1995; Bailey & Merritt, 1997). With the support of the Departments of Education and Labor, standards have been developed so far in 13 industries (U. S. Department of Education, 1994, p. 7). Once standards are defined, assessments can be developed so that schools, employers and communities can certify workers as prepared for jobs. This system of performance-based certification can help American businesses to transform themselves into high-wage, high-skill, high-performance work organizations.

Models of certification programs in progress include Dade County, Florida, pilot testing a competency-based curriculum involving 40 schools using the SCANS workplace

competencies; and businesses in Broome County, New York, using SCANS to define what knowledge and skills their workers need to do their jobs (U. S. Department of Education, 1994, p. 7).

Bailey & Merritt (1997) conducted studies of 22 pilot projects funded by the Departments of Labor and Education to determine whether broader education reforms will be advanced or impeded by a national skill standard system. They concluded that the potential contribution of the skill standards movement to broader education reform movement is unclear – a positive influence will depend on the nature of changes taking place in workplaces. If employers forsake the "high-performance" workplace strategy and return to the traditional approach, standards that reflect employers' needs cannot promote reform (1997).

4. *Incentives for students to meet high standards.* Although most students see little connection between what is required at school, in their jobs and what they will be doing in a few years, school-to-work partnerships can change that mind set (U. S. Department of Education, 1994, p.8). Many school-to-work partnerships use jobs as incentives through summer jobs, part-time or full-time jobs.

In an effort to communicate the importance of school performance to students, ETS developed a database of student performance in school called WORKLINK to demonstrate to employers a student's readiness for high-skill, high-wage jobs. Likewise, ACT developed an employability skills assessment, "Work Keys" that measures student performance in relation to a half dozen employability skills that have been verified as important by employers. Students may carry these results or incorporate them in a portfolio when looking for jobs.

5. *Career guidance, exploration and counseling for all students.* The National Tech Prep Network advocates that career awareness, exploration and planning should begin at the elementary level and continue throughout the college experience. Students should become familiar with many different job/career options, information on what is required to be successful in positions should be available to them, and they should be allowed to discover and explore their own interests and aptitudes.

Although counselors and teachers are traditionally responsible for providing career guidance activities in schools, students can be assisted by parents, business and community leaders who make classroom presentations about their jobs. Field trips that provide visits to local workplaces provide first-hand knowledge of what people do at various jobs.

6. *Integrated academic and vocational learning.* Cognitive science provides research data that hands-on learning works best for at least 75% of the students. Students learn more when they are asked to solve practical problems and perform real-life tasks. Teachers across the country of all subjects are beginning to focus the curriculum on what students do, which fosters collaboration between academic and vocational teachers in partnership with the business community. The connection between academic and vocational instruction in some classes comes naturally. For example, repairing an automobile engine may require the use of algebra, or reading technical manuals and magazines can improve students' reading performance. In other instances, such as when a vocational teacher assigns a written report, the vocational teacher reads it for technical content and the English teacher grades it for grammar, which fosters collaboration between the two teachers. A common planning time to design integrated lessons may be needed to facilitate the collaboration. An interdisciplinary approach to curriculum

integration is described in models by Fogarty (1991) in Appendix A.

Business partners contribute to the integration of academic and vocational instruction by identifying what employees are expected to do and problems teachers might use to help students learn important concepts. "The more teachers can link their lessons and materials to actual work-site experiences", says School-to-Work Connections (as cited in U. S. Department of Education, 1994), "the more likely it is that programs will be successful."

7. *Integrate school-based learning with work-based learning.* School-to-work partnerships are strengthening the link between what students learn at school and on the job. This often requires increasing time spent in structured worksite learning, such as provided in apprenticeship programs. On-the-job, work-based instruction is often woven into the school curricular through several models of integration developed by Grubb et al. (1991). A description of these models is located in Appendix A.

8. *Prepare students for two futures: jobs requiring technical skills and further learning, either job-specific training or four-year college.* More school-to-work programs are being designed to prepare students not only for a job, but for further technical training as well as to pursue baccalaureate and even advanced degrees. This will allow students the choice between an occupational preparation or college.

Successful models include The Certificate of Mastery (CIM) passed by Oregon in 1991, which prepares students with fundamental skills needed to be successful whether they go to college or directly to the workplace; Oakland's Health and Bioscience Academy, where 80% of its graduates meet the rigorous requirements for admission to the University of California; and the Academy of Finance in New York, where all seniors take

a college-level course and 90% of its graduates go on to college.

State of Michigan Initiatives

Recently John Engler, Governor of Michigan, announced the awarding of state grants to students and teachers to train students for high-skill jobs that don't require a four-year degree. As reported by Christoff (1998) in the Detroit Free Press, about 200 teachers will get about $10,000 each to spread innovative teaching methods to other schools, especially those that use technology such as computers in the classroom. About 10,000 students enrolled in community colleges will be awarded $2,000 each. The grants are part of a 14-point program the governor announced at a School-to-Work Conference on June 16, 1998, which focused on technical training for high school students and graduates. The grants and scholarships will be funded by the state Renaissance Fund, a state account devoted to economic development projects. In addition, the fund will pay up to $30 million to create five new technical training centers.

According to Engler, Michigan is fast approaching a shortage of skilled workers for business and industry such as draftsmen, millwrights and computer technicians-- so called "gold-dollar jobs" – work that requires high level skills but not college degrees (Christoff, 1998).

Additionally, many educational initiatives by state educators and lawmakers have provided new ideas or concepts at the State and local levels from 1982 to the present that have improved the educational system and paved the way for current efforts in educational reform. Those most recent and ongoing are highlighted below:

Public Act 25 of 1990: Legislation intended to drive comprehensive school reform

in the State into the 21st century by raising standards and improving the quality of education for each student by making six major changes in the school code, one of which is a core curriculum component (Michigan Council on Vocational Education, 1992).

Public Act 335 of 1993: An Act which amended P.A. 25 and replaced the Model Core Curriculum with a Core Academic Curriculum which is required by all districts in the state beginning with the 1997-98 school year. The intent of P.A. 335 is to develop school programs which provide high quality instruction to "all students" with a focus on student knowledge and skills. This will require a vision of the value of a discipline to the learner, and development of content standards and benchmarks. Education for productive adults is to be achieved through integration of SCANS competencies and foundation skills with traditional teaching subjects and "real life experiences". The plan for implementing core academic curriculum requirements from P.A. 335 of 1993 is described and illustrated in Appendix D. (Michigan State Board of Education, 1994; Michigan Department of Education, 1993).

School-to-Work Opportunities: The School-to-Work Opportunities Act of 1994 named Michigan as one of only eight states to meet 23 rigorous requirements to receive the first of the five-year grants in the amount of $8 million ($49 million was requested to be distributed over five years) for implementation or seed money (Dykman, 1994). The purpose of Michigan's School-to-Work initiative is to assist all youth by connecting school-to-career oriented employment or further education and training. In doing so, Michigan established the following goals:

<u>By the year 2000, the following will apply to graduates from Michigan schools</u>:

1. 100% will have at least one job shadowing experience during grades 8-11.

2. 100% will have an Education/Employment Development Plan.

3. 90% will have an endorsed high school diploma.

4. 50% will have participated in a structured paid work-based learning experience.

5. 40% will have completed a career major linked to a community college associates degree program or registered apprenticeship.

6. 30% will have earned a skill certificate in a career field.

Also by the Year 2000

7. 100% of Michigan citizens will understand the goals and elements of the School-to-Work initiative.

8. 50% of the high schools will offer inter-disciplinary career majors.

9. 25% of Michigan employers will be actively participating in work-based learning options.

The State will achieve these goals in partnership with 59 service areas that include intermediate school districts, area vocational education consortia and individual school districts which must apply to the State Department of Education for funding grants. The local plan must contain a narrative on how the school-to-work program will be implemented and must identify program goals, outcomes and measures of assessment to receive a federal grant. One such partnership is the Oakland School-to-Work Partnership of the Oakland County Intermediate School District.

Oakland School-to-Work Partnership: As School-to-Work programs emerge throughout the country, Oakland County views itself as a leader of this pioneering movement in the State of Michigan. In 1995 Oakland County was awarded $1.2 million to initiate the Oakland School-to-Work Partnership by October 1, 1996. This "venture capital" is designed to assist local community partnerships to support national and state

school reform and workforce development efforts ("Oakland County School-to-Work," 1995-96).

In Oakland County the purpose of Michigan's School-to-Work initiative is directed by the Oakland School-to-Work Partnership Executive Council, a partnership between local educators, employers and community members. The resources of the county are many ---a community that is attractive to employers and investors, a tradition of educational excellence, a willingness of its communities to work cooperatively in productive and creative ways, and its commitment to continuous improvement. However, Oakland county must overcome some very real challenges as it moves forward to implement a comprehensive school-to-work system – namely,

- the perception that most students are college-bound, will graduate from college and will get good jobs
- many students graduate without clear career goals or the skills needed for success in the workplace
- uncoordinated workforce development efforts
- a global economy and growth of technology in the workplace which have increased the demand for well-trained and flexible workers ("The Main Event," 1997).

School districts in Oakland County submit grant applications to the School-to-Work Executive Council to develop programs and opportunities that focus on achieving the Michigan goals ("Oakland County School-to-Work," 1995-96).

The Walled Lake Consolidated School District was among many Oakland County districts to receive grants during the 1995-1997 school years. As a result, some Walled Lake Schools students, teachers and counselors completed internships and job shadowing experiences; and teachers and counselors developed curriculum to integrate school-based and work-based learning.

The Future of School-to-Work

This review of literature has already provided clear evidence that everything students are taught in schools must relate to the skills, behaviors and knowledge needed following graduation from high school. All students will eventually be working, hopefully, and schools must provide the work-based competencies needed for entry-level employment. This means that all classes must focus on the eventual goal of productive employment not just vocational or technical education, which means that school-to-work is the future of education (Ochs & Shoemaker, 1998).

In a published interview ("Where is Vocational Education Headed?," 1996) noted leaders in the education and School-to-Work fields were asked questions regarding the future of integration of academics and vocational education and other school-to-work issues. Below are a few of the responses:

Integration of academics and the future of high school vocational education: Dale Parnell, Professor, School of Education, Oregon State University, states that traditional vocational education courses at the high school level will be modified to match the broader idea of career pathways, and high school courses will concentrate on systems.

Larry Rosenstock, Executive Director of a Technical Arts High School in Cambridge says the future of vocational technical programs lies in math, science, technology and the humanities. He views, for example, a liberal arts education to be explored in the context of a technical environment as meeting the needs of a majority of disenfranchised youth who do not benefit from the current educational system.

Should high schools offer college prep and tech prep "tracks"? Hillary Pennington, President, Jobs for the Future, says effective learning for every child has to

include hands-on, applied learning and abstract learning that is held to the same high intellectual standards. This can be achieved through the use of career majors.

Carolyn Warner, President, Corporate-Education Consulting, says that tracks aren't bad unless they are used to discriminate against students because of economics or ethnicity. She recommends instead, however, pathways and options.

Is work-based learning necessary and will there be opportunities for all students? Larry Rosenstock views the structure of schools, namely Carnegie units needed to graduate as an impediment to the number of students available to participate in internships. He calls for an adjustment in high school exit requirements and postsecondary entrance requirements.

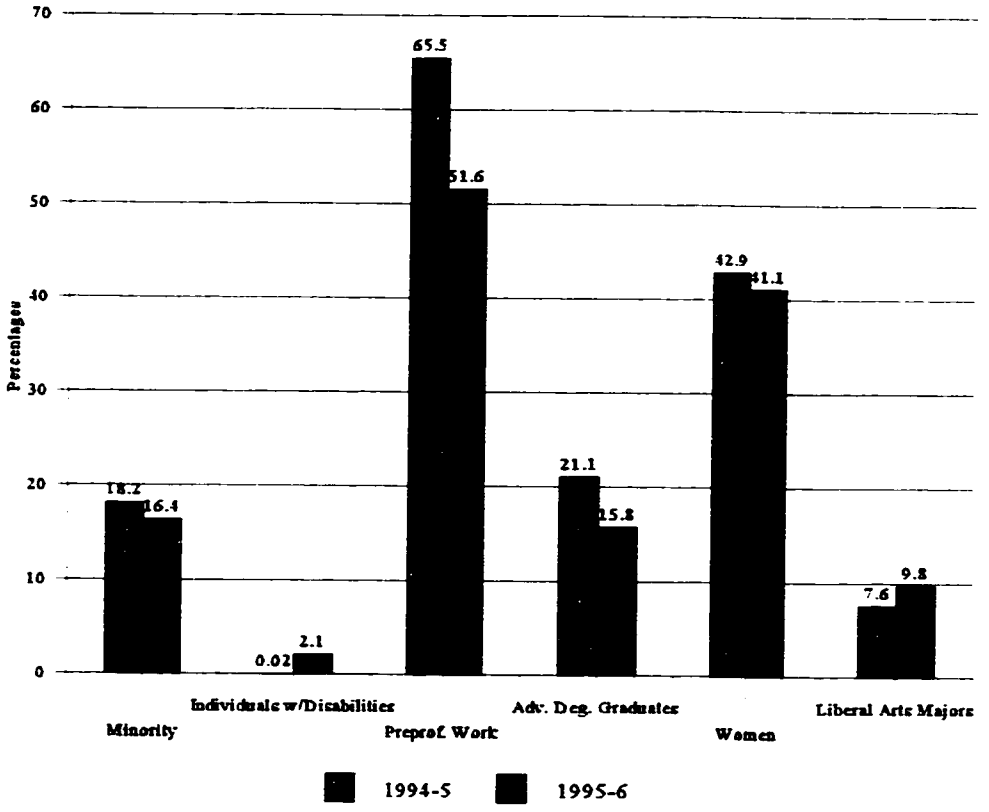
Carver Gayton, Director, College and University Relations, The Boeing Company, advocates work experience in at least the last 3 years of high school. Students need the experience of being on the job to see what is taking place and to develop the skill of innovation.

J. D. Hoye, former Director, National School-to-Work Office acknowledges the lack of feasibility for every student in America to have a paid work experience or apprenticeship prior to graduation but advocates some kind of work-based experience that will teach them to connect with their world--all of which is not in the classroom. She views this as an attainable goal with help from the community.

Teaching strategies: Applied vs. theoretical and lecture based. Hillary Pennington ways skills needed for a job or college are not that different. Both hands-on training and theoretical knowledge are needed by all. Young people will need to apply what they know. Therefore, some kind of context and skill training is needed at the high school level

Figure 10

Who's Getting the Jobs?
Profiles of New Hires for 1994-1997



that will use some of what students know. Research shows that employers are more attracted to students with work experience where application of knowledge has already been demonstrated, as shown by data in Figure 10.

The role of business, labor and public institutions. Gayton acknowledges the importance for businesses to state clearly the competencies they are looking for and to work with schools on an ongoing basis. Gene Bottoms, Director of the Southern Regional Education Board, says employers should work with educators to allow the workplace to be used so that students can gain insight. He advocates that employers should ask for transcripts of grades so that students see the connection between school and work so that

the message clearly indicates that high school is important.

Has school-to-work effected coordination of high school and college curriculum? Patricia Larke, Associate Professor, Educational Curriculum and Instruction, Texas A. & M. University and Dale Parnell both acknowledge that turf wars continue to exist between secondary and postsecondary educators and institutions. Larke says unbiased eyes are needed to view roles and make changes for the good of students. Parnell adds to this dilemma the issue of funding. He says as long as money is not taken from one entity and given to the other there is possibility that communication will improve.

Hoye views postsecondary entrance requirements as an obstacle to articulation. She says more cooperation is needed to define what a student needs to know and be able to do to get into higher education. Hoye acknowledges that tech prep has been a powerful tool in some areas, but depending on how it is implemented and accepted by faculty, says it may be used as a "smoke screen" that arrives at the same results.

Summary

It is clear from the review of literature that America must develop a highly skilled, technical workforce to be competitive in a global economy; and that a collaborative approach between the school and its employers is key. Employers frequently cite the unpreparedness of today's graduates for the workplace and repeatedly call for reforms in education. Therefore, educational reform for the twenty-first century should focus on aligning school-based learning with the needs of the workplace.

The results of a joint study by the U.S. Departments of Education and Labor advocates that creating a match between what work requires and what students learn

requires changing how and where students are taught (SCANS, 1991). SCANS recommends seven competencies and foundation skills that are needed by all students – those going to college and those going directly into the workforce. These competencies and skills should be taught in grades K-12 and integrated into all curriculum content.

The GOALS 2000 Educate America Act signed into law by President Bill Clinton in 1994 addressed these issues through the addition of two goals to the original Act. One of the goals encourages local community-based actions to meet educational needs and the other provides for teacher education and professional development.

Under the umbrella of GOALS 2000, the School-to-Work Opportunities Act of 1994 was also signed into law as the first national comprehensive plan toward transition from school to the workplace or higher education. From the national plan, local plans must be developed that include broad community support. A broad consensus with education and community creates a shared vision and understanding of new educational goals that makes school reform much more possible with new teaching strategies and different kinds of partnerships.

The State of Michigan has established nine school-to-work goals for its high school graduates and adult learners by the year 2000 and is leading the way in developing model school-to-work programs. Oakland county, the wealthiest county in the state, is forging ahead with a commitment to professional development that supports the kinds of learning needed to develop more effective curriculum through which the goals may be achieved.

The SCANS model of workplace competencies and skills used in this study is accepted as a national standard. As supported by the literature, local communities in

partnership with all stakeholders in education, must establish their own standards, benchmarks, and needs. The SCANS model is used as a vehicle to begin the process.

CHAPTER III

METHODOLOGY

Employers in the 21st century will expect the educational system to ensure that all of its graduates have the skills to lead successful and rewarding lives. This will require a commitment to educational change and a willingness to take action. New education goals will create conditions for change if they have been developed in collaboration with the business community. Schools and the workplace must be equally perceived as learning sites and both must pursue congruent goals. With a consensus about what the goals of school should be, a framework can be established for making informed decisions and priorities that may impact school organization, instructional methods and approaches to curriculum.

The purpose of this study was to determine the perceptions of teachers and employers in a metropolitan community about the competencies and skills needed by high school graduates to be effective in the workplace of the future. The intent of this research was to determine points of agreement between these two stakeholders and to use the data to develop a framework to generate new philosophies of curriculum and instructional strategies at Walled Lake Central High School.

This chapter describes the methodology that was used to collect and analyze data needed to address the six research questions posed for this study. This discussion includes the research design, setting for the study, population and sample, instrumentation and survey instrument pretesting, data collection procedures and analysis, research questions and hypotheses. Each of these topics is presented separately.

Research Design

The framework for this study was formed by a descriptive research design, which describes the attitudes or perceptions of the participants. Independent variables were not manipulated nor was treatment provided to the two populations studied. Therefore, a descriptive research design was appropriate for this study.

A survey measuring the competencies and skills defined by the Secretary's Commission on Achieving Necessary Skills (SCANS, 1991) was completed by high school teachers and employers in one metropolitan community to determine if perceptions of high school teachers about what students should know to obtain and maintain jobs in today's society is congruent with what employers expect of entry-level employees. This study explored the relevance of evidence from professional development experiences in which some teachers have participated that undergird school improvement efforts, as well as the relationship of the school and the business community. A comparison of responses by teachers and employers provided data which contrasted their perceptions of the importance of skills and competencies and the frequency of their use in the classroom and in the workplace of the 21st century.

Variables in the Study

Dependent variables

The dependent variables are the seven major skill areas described by the Secretary's Commission on Achieving Necessary Skills (SCANS, 1991). These seven areas are subcategorized into 27 specific competencies agreed upon by employers from across the country as essential for students to achieve a successful transition from school to work. Perceptions of teachers and employers, as stated below, were measured to determine their effect on the variables (independent) this researcher chose to study:

- Perceptions of teachers on the importance of teaching competencies and foundation skills needed for the workplace
- Perceptions of employers on the importance of competencies and foundation skills needed for the workplace
- Perceptions of teachers on the frequency of teaching or using workplace competencies and foundation skills in their classrooms
- Perceptions of employers on the frequency of using workplace competencies and foundation skills in their place of business

Independent variables

This researcher chose to study the following situations or conditions as they relate to the participants in the study. Manipulation did not occur:

- disciplines of teachers
- occupations of employers
- teacher participation in staff development experiences
- employer relationships with the school district

Moderating variables

Personal and professional demographic data of teachers and employers that include gender, years of teaching or years in business or occupation, and highest level of education.

Research Questions and Hypotheses

This research was guided by the following questions and hypotheses:

Research Questions:

1. Do teachers of identified disciplines have different perceptions of the importance of skills needed for the workplace?
2. Is there a difference in employer and teacher perceptions of the importance of skills needed for the workplace.

3. Do teachers who completed staff development experiences have different perceptions of the importance of skills needed for the workplace than those who did not complete these experiences?

4. Do employers of identified occupations have different perceptions of the skills needed for the workplace?

5. Is there a difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace?

6. Is there a difference in the perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district?

Hypotheses:

Each hypothesis was tested at the alpha level of .05 to determine statistical significance:

$H_{(R)1}$ There is a statistically significant difference among teachers of identified disciplines in the perceptions of the importance of skills needed for the workplace.

$H_{(R)2}$ There is a statistically significant difference between the perceptions of employers and teachers of the importance of skills needed for the workplace.

$H_{(R)3}$ There is a statistically significant difference in the perceptions of teachers who completed staff development experiences and those who did not complete these experiences of the importance of skills needed for the workplace.

$H_{(R)4}$ There is a statistically significant difference in perceptions of employers of identified occupations of the importance of skills needed for the workplace.

$H_{(R)5}$ There is a statistically significant difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace.

$H_{(R)6}$ There is a statistically significant difference in perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district.

Setting for the Study

This study was conducted in a metropolitan community located in southwestern Oakland County in the state of Michigan. The geographic area encompasses more than 55 square miles and includes all or part of nine governmental units: the cities of Farmington Hills, Novi, Orchard Lake, Walled Lake and Wixom; and the townships of Commerce, West Bloomfield and White Lake; and Wolverine Lake Village.

Recent census information indicates that Oakland county has over a million residents, 38,000 businesses, and employs over 615,000 people. Approximately 40% of Oakland county residents are college educated, and the majority are employed in executive, administrative, managerial, administrative support (including clerical), sales, and professional specialty occupations. Ninety percent of Oakland county residents are white.

According to statistics quoted by researchers from the Institute of Labor and Industrial Relations at the University of Michigan and presented to the Oakland County Economic Outlook Luncheon, Oakland County leads the state in employment growth in the 1990s, with private sector growth of 13.8% between 1990 and 1995. This rate of growth is more than one and a half times the growth rate of the state (MESC, 1995). A broad range of industries, from manufacturing to trade, enjoyed employment gains over this period. However, help supply (temporary) services had the largest increase in employment at 121% (Fulton, Grimes & Nicolas, 1996).

In 1993, the last year of available data, the personal income per person in Oakland County was $29,781, as quoted by the U.S. Department of Commerce, Bureau of Economic Analysis. This ranks per capita income in Oakland County as highest in the

state of Michigan and well above the national average (Fulton, Grimes & Nicolas, 1996).

Employer participants in this study are located within the community of the school district selected for study and the majority are members of the Lakes Area Chamber of Commerce.

The school district used in this study, the Walled Lake Consolidated School District, is located in the southwest area of the county. Educational services are provided to fifteen elementary schools, grades k-6; two middle schools, grades 7-8; three high schools, grades 9-12, and one technical center. In the fall of 1998 two additional middle schools will open and the student population of the district will exceed 13,000.

High schools in this district feature a variety of instructional schedules, including a traditional six period day as well as a rotating six period block schedule. All high schools are accredited by the North Central Association and hold interim accreditation by the state. Programs of study include basic education in addition to 160 courses ranging from trigonometry and calculus to radio, TV and computer programming. Nine advanced placement courses are offered. Also available are a wide range in extra-curricular activities and athletic programs.

The district employs 813 certified teachers and over 50 administrative, supervisory and technical personnel. Sixty-two percent of teachers have advanced degrees. Class size averages 27 students or less in grades 7-12; and both MEAP and HSPT scores in the district surpass state averages.

Population

Educators and employers from a metropolitan community participated in this

study. Teachers in one high school within the school district selected for study defined the educational population. This high school is leading the district in educational reform initiatives, such as block scheduling and site-based decision making and has made a commitment to school-wide change through the North Central Accreditation process. One of the goals stated for school improvement is that "Students will acquire competencies and skills needed to make a successful transition from school to work". The objectives, then, become the criteria by which the school chooses, develops, implements and assesses curriculum, thereby creating a need for staff development and inservice training. Tyler (1949), in his writing on the purpose of education, inferred that educational objectives must be considered value judgments of those responsible for their implementation, and require a comprehensive philosophy of education based on certain kinds of information and knowledge from many sources (p.4). Tyler advocated that studies of the learner, community (contemporary life outside the school) and teacher, combined with use of philosophy and psychology of learning, are needed to form wise and comprehensive decisions about school objectives (p. 5).

Consistent with the philosophy of Tyler (1949) and recent studies on school change, community involvement and student performance (Fullan, 1990; Goldberger & Kazis, 1996; Goldring & Rallis, 1993;; Russell, 1998 Turner, 1998; Wagner, 1993), the second population defined for this study represented employers within the metropolitan community of the school district selected. The employer population represents many occupations and sizes of employment within the geographic boundaries of the school community. Many of these employers work in partnership with the school district in providing work-based learning experiences such as cooperative education, work

experience, job shadowing and mentoring programs. They offer entry-level employment opportunities to graduates from the district, but need an opportunity to speak in a clear or consistent voice about the skills employees need.

Sample

Teachers: All teachers from Walled Lake Central High School, within the Walled Lake Consolidated School District, participated in this study. These teachers were assigned full-time responsibilities in the following disciplines: mathematics, science, history and government, communication arts, health and physical education, fine and performing arts, career and vocational education, world languages, and special services. The size of the sample is 98 teachers, which includes classroom teachers, paraprofessional staff, counselors and administrators.

Employers participating in the study were invited using a list of businesses in Oakland County that was obtained from the Lakes Area Chamber of Commerce, which represents employers within the Walled Lake Schools community. To provide a cross-section of the employer population, all members of the Chamber were asked to participate so that varying occupations and sizes of businesses were given an opportunity to be represented. Since participation was voluntary, no attempt was made to use random sampling procedures. The sample consisted of 391 employers invited to participate in the study.

Instrument

The data used in this study was obtained through use of a descriptive survey using the information reported as a result of a 12-month study by the Secretary's Commission

on Achieving Necessary Skills (SCANS). Interviews conducted by the Commission with business leaders, and workers alike, resulted in the same message, good jobs depend on people who can put knowledge to work. (SCANS, 1991).

The SCANS survey instrument (Appendix B), "Attitudes Toward Workplace Skills" was originally developed by Meeks, 1996, in her doctoral study of Attitudes Toward Workplace Skills of Employers and Eighth and Ninth Grade Students, and was revised in the doctoral dissertation of JoAnn S. Neal (1996) in her study of "School-to-Work Transition as Viewed by the Staff of Ethelene Jones Crockett Technical High School and Career Technical Center".

Meeks (1996) found that employers representing different industry types perceived the skills differently, although these differences were not significant. The findings indicated a statistically significant difference in the skill areas of thinking skills, resource skills, systems and technology and informational skills among students and employers, with students perceiving these skill areas more important than employers. There were no significant differences in the remaining three workplace skills: basic skills, personal qualities, and interpersonal skills. However, again, students perceived these skills more important than employers. The major conclusions determined from Meeks' study are that school-to-work skills need to be provided during the early grades and reinforced throughout the educational process, and employers need to be more involved in helping schools establish curriculum that can improve school to work transition (1996).

Neal's study (1996) focused on perceptions of a high school staff on the importance and frequency of teaching workplace skills identified by SCANS (1991). The results of her study indicated a significant difference in the importance of teaching

interpersonal skills among the two populations surveyed for this study. Specifically, the career and technical teachers perceived this skill to be more important than teachers at the technical high school. Other findings include positive correlations between all skill areas, indicating that teachers who considered skill areas more important were more likely to teach them on a frequent basis, and no significant differences were found in perceptions of teachers based on selected demographic data such as level of education, years of teaching experience, or years in current position. The findings endorsed and supported the competency and skill areas delineated by SCANS for the population of this study. Although some disparity was found among teachers, most were in agreement on both the importance of the skills and the frequency of teaching them in each subject area. One of the conclusions of Neal's study was consistent with a conclusion from Meek's study in that the importance of workplace skills must be introduced in the early elementary grades.

Permission was received by this researcher (located in Appendix C) to use the "Attitudes Toward Teaching Workplace Competencies" survey, as revised by Neal. The survey instrument, as shown in Appendix B, has been further revised by this researcher to include title and instructions applicable to participants in this study. Part I of the survey instrument includes those skills deemed necessary to determine attitudes of teachers and employers on the importance of the competencies and the frequency in which they are taught or used in the workplace. A short description of each skill was included on the survey to provide the participants with a common definition to allow consistency in the responses (Neal, 1996).

A total of 27 competencies divided into seven skill areas are included on the survey. The respondents are asked to rate each competency twice. The first rating uses a

four point Likert scale with a "1" indicating "no importance" and a "4" "very important." A neutral point was not provided on this scale. The participants are then asked to rate each competency using a five point scale measuring the frequency the competency is taught. A "1" indicates "never" and a 5 indicates "very often." (Neal, 1996).

Demographic Survey:

Part II of the survey is revised to include a demographic profile of personal and professional characteristics of the respondents. A brief demographic questionnaire is developed for each of the two populations in the study. Questions to employers include information relative to years in business, occupation or nature of business, relationship to the school district, highest level of education and gender. Questions to teachers include years of teaching, subject or discipline taught most of the time, highest level of education, participation in staff development, and gender. The information was used to test the variables previously hypothesized and provide descriptive information relative to each sample.

Reliability and Validity

According to Meeks (1996), this instrument was tested for internal consistency reliability by 199 eighth and ninth grade students and 68 employers. Their responses to the items were used in a Cronbach's alpha coefficient statistical procedure to determine the reliability of each of the skill areas on the instrument. The resultant coefficient alphas ranged from .74 for basic skills and interpersonal skills to .84 for informational skills. The coefficient alpha for the entire instrument was .93. These coefficients indicate an adequate level of internal consistency among the items on the individual subscales and for the 27 items included on the Job Analysis Form (Meeks, 1996). Figure 11 represents results of

this analysis.

Figure 11

Cronbach's Alpha Coefficient
Internal Consistency on Skill Areas of Job Analysis Form

Skill Area	Number of Items	Alpha Coefficient
Basic Skills	5	.74
Thinking Skills	4	.77
Personal Qualities	4	.75
Resources	4	.77
Systems and Technology	2	.78
Informational Skills	3	.84
Interpersonal Skills	5	.74
Total	27	.93

(Note: Meeks, 1996)

According to Meeks (1996), content validity has been determined through the careful development of the skill areas and competencies based on information obtained from the SCANS report. The items that were included, along with the definitions provided to explain the competency, are based on a thorough review of related research and experiences of the people who were included on the SCANS Commission (Neal, 1996).

Survey Instrument Pretesting

The survey instrument was pretested with a total of 10 faculty members representing each discipline of study within the school. The faculty was invited to provide feedback indicating any confusing statement or item of concern. Also of equal importance was their feedback related to the printing, layout, directions and time used to complete the survey. All concerns were addressed as needed and adjustments were made.

Data Collection

Following approval by the Behavioral Investigation Committee at Wayne State University, the following procedures were used in collecting data from each participant group:

Data collection from teachers.

A brief overview of the survey, including the purpose of the study, was given during a staff meeting by a co-chair of the North Central Association (NCA) committee. Staff received prior knowledge of the NCA goal for which baseline data was needed and obtained from this study. A cover letter from the researcher, permission letter from the Assistant Superintendent of Walled Lake Schools and an anonymous survey were distributed to all certified staff of Walled Lake Central High School, which included teachers, classroom paraprofessionals, counselors and administrators. Surveys were completed and collected during the staff meeting. To maintain confidentiality, a sealed box was provided at the rear of the room so that teachers returned the completed surveys as they left the meeting. Surveys were placed in mail boxes for eligible staff members absent from the meeting with instructions to return them to a sealed box in the main office on the day received. It was assumed that all surveys had been received two days following the initial distribution.

Data collection from employers.

Survey packets were developed that included the following: a cover letter from the researcher describing the purpose of the study and assurances of confidentiality, a permission letter from the Assistant Superintendent of Walled Lake Schools, an anonymous survey, and a stamped, self-addressed return envelope.

Packets were mailed to all members of the Lakes Area Chamber of Commerce and to other non-member employers within the community. Return envelopes were coded by occupational groups to provide a means for follow-up of responses by occupations. All mailings were submitted to the U. S. Post Office on the same date and a log was kept to identify responses of employers by occupational groups. Individual employers were not identifiable. Ten days after the mailing, reminders were sent to groups of employers where responses were low. Three weeks following the mailing an e-mail reminder was sent to all members by a Chamber representative who worked with the NCA committee in this effort. After four weeks it was assumed that all employer surveys had been received.

Data Analysis

Data collected from teachers and employers in this study was analyzed using the Statistical Package for the Social Sciences, (SPSS), Release 4.1 for IBM O/S MVS. Both descriptive and inferential procedures were used as indicated below:

a) The two samples are analyzed using descriptive statistical procedures.

b) Each hypothesis was tested using inferential statistical procedures. The procedures that were used included Kruskal-Wallis one-way analysis of variance, Mann-Whitney U test for independent samples, and t-test for independent samples. Significance of the statistical analysis was determined by an alpha level of .05.

Figure 12 represents a summary of the research questions, variables and data analysis techniques that were used.

Figure 12

Statistical Procedures

Research Questions	Variables	Statistical Analysis
1. Do teachers of identified disciplines have different perceptions of the importance of skills needed for the workplace?	Independent Discipline of teachers Dependent Perceptions of workplace competencies that are important in the classroom.	Kruskal-Wallis one-way analysis of variance to identify the differences in perceptions of teachers on the importance of skills needed for the workplace by the disciplines teachers represent.
2. Is there a difference in employer and teacher perceptions of the importance of skills needed for the workplace?	Independent Type of respondent • Employer • Teacher Dependent Perceptions of workplace competencies that are important in the classroom	t-Tests for two independent samples were used to determine if perceptions of the importance of skills needed for the workplace differed between employers and teachers.
3. Do teachers who completed staff development experiences have different perceptions of the importance of skills needed for the workplace than those who did not complete these experiences?	Independent Type of teacher • Completed staff development in integrating curriculum and job shadowing • Did not complete staff development in integrating curriculum and job shadowing Dependent Perceptions of workplace competencies that are important in the classroom	t-Tests for two independent samples were used to determine if perceptions of the importance of skills needed for the workplace differed between teachers who had completed staff development training in integrating curriculum and those who did not complete this training. Mann-Whitney test for independent samples to determine if there is a difference in perceptions of the importance of workplace skills taught in the classroom between teachers who completed staff development training in job shadowing and those who did not complete this training.
4. Do employers of identified occupations have perceptions of skills needed for the workplace?	Independent Occupations of employers Dependent Perceptions of competencies and skills that are important in the workplace	Kruskal-Wallis one-way analysis of variance to identify the differences in perceptions of employers on the importance of workplace skills needed by the occupation they represent.

Figure 12

Statistical Procedures (continued)

Research Questions	Variables	Statistical Analysis
5. Is there a difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace?	Independent Type of respondent • Employer • Teacher Dependent • Frequency of teaching workplace skills in the classroom • Frequency of using workplace skills in place of business	t-Tests for two independent samples were used to determine if perceptions of the frequency with which workplace skills are taught and the frequency to which they are expected in the workplace differs between teachers and employers.
6. Is there a difference in the perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district?	Independent Employer relationships with the school district Dependent Perceptions of competencies that are important in the workplace	Kruskal-Wallis one-way analysis of variance to test differences in perceptions of employers on the importance of skills needed in the workplace based on each relationship with the school district.

Summary

This chapter has described the research design, the setting, the population, the instrumentation and pretesting, the data collection and the statistical procedures that were used in conducting the research study.

CHAPTER IV

ANALYSIS OF RESULTS

Overview of the Study

The purpose of the study was to determine the perceptions of teachers and employers in a metropolitan community about the competencies and skills needed by high school graduates to be effective in the workplace of the future. The study determined points of agreement as well as disagreement between these two stakeholders. It provided data that may be used to develop a framework for new philosophies of curriculum and instructional strategies at Walled Lake Central High School.

Six research questions were developed that related to the purpose of the study. A hypothesis was formulated for each question to determine the validity of the conclusions.

A survey measuring the competencies and skills defined by the Secretary's Commission on Achieving Necessary Skills (SCANS, 1991) was completed by teachers and employers participating in the study. The competencies and skills included basic skills, thinking skills, personal qualities, resource skills, systems and technology skills, information skills, and interpersonal skills.

A total of 96 staff members at Walled Lake Central High School completed the survey instrument (see Appendix B) during a staff meeting. This included 16 surveys that were received from noninstructional staff members that could not be used, as they were not directly involved with classroom instruction. Therefore, data from 80 staff members was used in the statistical analysis.

For purposes of this study, all certified and classroom paraprofessional staff are referred to as teachers. Specific job classifications include classroom teachers, counselors,

administrators and classroom paraprofessionals. Table 1 presents the breakdown of teacher responses cross tabulated by job classification. The response rate from the total population of teachers was 82%.

Table 1

Teacher Survey Responses by Job Classification

Job Classification	Distribution			
	Sent		Returned	
	Number	Percent	Number	Percent
Teachers	84	100.0	71	84.5
Counselors	5	100.0	5	100.0
Administrators	3	100.0	3	100.0
Classroom Paraprofessionals	6	100.0	1	16.6
Total	98	100.0	80	81.6

Survey packets were distributed by U.S. mail to 391 employers. Of this number, 94 employers returned their surveys with all copies usable for the statistical analysis. The response rate for employers was 24%. Table 2 represents the breakdown of employer responses cross tabulated by occupations of employers.

Table 2

Employer Survey Responses by Occupations of Employers

Occupation Type	Distribution			
	Sent		Returned	
	Number	Percent	Number	Percent
Agriculture/Forestry/Fishing	4	100.0	1	25.0
Transportation/Public Utility	10	100.0	3	30.0
Finance/Insurance/Real Estate	66	100.0	24	36.3
Construction	14	100.0	9	64.2
Wholesale Trade	11	100.0	4	36.3
Health Services	24	100.0	10	41.6
Manufacturing	23	100.0	6	26.0
Retail Trade	81	100.0	11	13.5
Service (Other than Health)	158	100.0	14	8.8
Other Occupation	0	0.0	6	0.0
Total	391	100.0	88	24.0

Missing 6

This chapter reports data and information from the survey responses and results of the six hypotheses posed in Chapter I. Development of the chapter is as follows:

- A descriptive analysis of demographic responses to questions asked of teachers and employers
- Description and analysis of responses from the seven skill areas
- Analysis of inferential statistical procedures used to test the hypotheses

Demographic Analysis

Teacher demographics

Teachers were asked to complete a brief demographic survey to provide personal characteristics and an overview of their professional characteristics and experiences.

Their responses are divided into the following sections: personal characteristics (question 60), professional characteristics (questions 57-59 and 61-62), and professional development activities (questions 55-56 and 63-64).

Personal characteristics. Teachers were asked to indicate their gender on the survey. Their responses were summarized using frequency distributions. The results of this analysis are presented in Table 3.

Table 3

Frequency Distributions
Gender of Teachers

Gender	Frequency	Percent
Male	36	45.0
Female	44	55.0
Total	80	100.0

Missing 0

The majority of teacher respondents (n=44, 55%) indicated their gender as female. Thirty-six (45%) teachers identified their gender as male.

Professional characteristics. Teachers were asked to identify their length of employment in a secondary school from four forced choice responses that ranged from 1 to 5 years, to 20 years or more. Their responses were summarized using a frequency distribution. Table 4 reports the results of this analysis.

Table 4

Frequency Distributions
Years of Teaching in Secondary Education

Years of Teaching in Secondary Education	Frequency	Percent
1 to 5 years	22	27.5
6 to 12 years	17	21.2
13 to 19 years	9	11.2
20 years or more	32	40.0
Total	80	100.0

Missing 0

The largest group of teachers (n=32, 40%) responding to this question indicated they had been teaching 20 years or more. The second largest group (n=22, 27%) indicated they had been teaching in the range of 1 to five years.

Teachers were asked to identify the discipline (curriculum area) they taught most of the time. Their responses are summarized in Table 5.

Table 5

Frequency Distributions
Disciplines Indicated by Teachers Where Teaching Most of the Time

Disciplines	Frequency	Percent
Health/Physical Education	3	1.2
Fine/Performing Arts	8	10.0
Mathematics	11	13.7
Science	13	16.2
Social Studies	12	15.0
Business/Vocational/Tech Education	6	7.5
Communication Arts	8	10.0
Special Services	6	7.5
World Languages	4	5.0
Not Applicable	9	11.2
Total	80	100.0
Missing	0	

Teacher responses indicated that 3 (1.2%) were teaching health and physical education, 8 (10%) fine and performing arts, 11 (13.7%) mathematics, 13 (16.2%) science, 12 (15%) social studies, 6 (7.5%) business/voc/tech ed, 8 (10%) communications arts, 6 (7.5%) special services, and 4 (5%) world languages. Nine of the respondents to this question indicated "not applicable" on the survey. These respondents included counselors, administrators and paraprofessional staff who do not have a teaching assignment. The largest group of teachers (n=13, 16.2%) responding to the survey are teachers of science curriculum. Responses were further analyzed in a cross tabulation by years of teaching. Table 6 reports the results of this analysis.

Table 6

Crosstabulations
Disciplines Indicated by Teachers Where Teaching Most of the Time

Disciplines	Years of Teaching									
	1 to 5 Years		6 to 12 Years		13 to 19 Years		20 or more		total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Health/Physical Education	1	33.3	0	0.0	0	0.0	2	66.7	3	3.8
Fine/Performing Arts	5	62.5	1	12.5	0	0.0	2	25.0	8	10.0
Mathematics	2	18.2	2	18.2	2	18.2	5	45.5	11	13.8
Science	5	38.5	3	23.1	2	15.4	3	23.1	13	16.3
Social Studies	2	16.7	4	33.3	1	8.3	5	41.7	12	15.0
Business/Vocational/Tech Education	2	33.3	3	50.0	0	0.0	1	16.7	6	7.5
Communication Arts	2	25.0	2	25.0	0	0.0	4	50.0	8	10.0
Special Services	0	0.0	0	0.0	4	50.0	2	33.3	6	7.5
World Languages	1	25.0	1	25.0	0	0.0	2	50.0	4	5.0
Not Applicable	2	22.2	1	11.1	0	0.0	6	66.7	9	11.3
Total	22	27.5	17	21.3.	9	11.3	32	40.0	80	100.0

Missing 0

When years of teaching was cross tabulated by discipline the results of this analysis indicated that 50% or more of the staff who reported experience of 20 years or more are teaching in 33% of the disciplines: health and physical education (n=2, 67.7%), communications arts (n=4, 50%), and world languages (n=2, 50%). Of these disciplines, world languages and health/physical education are electives and communications arts is a core academic discipline. Teachers reporting 1 to 5 years of secondary teaching experience (n=22) are represented by 50% or more in only one discipline, fine and performing arts (n=5, 62.5) which is an elective discipline.

Participants were asked to identify their job classifications on the survey. Their responses were cross tabulated by gender. The results of this analysis are reported in Table 7.

Table 7

Crosstabulations
Gender by Teachers' Job Classification

Gender	Job Classification								Total	
	Teacher		Counselor		Administration		Paraprofessional			
	N	%	N	%	N	%	N	%	N	%
Male	33	46.4	2	40.0	2	66.6	0	0.0	36	45.0
Female	38	53.5	3	60.0	1	33.3	1	100.0	44	55.0
Total	71	88.7	5	6.2	3	3.8	1	1.2	80	100.0

Missing 0

The majority of respondents (n=71, 88.7%) identified themselves as classroom teachers on the survey. Five respondents (6.2%) identified themselves as counselors, 3 (3.75%) as administrators, and 1 (1.2%) as a classroom paraprofessional. The majority gender group in the sample is represented by female teachers (n=38, 53.5%).

Professional development. Teachers were asked to respond to their highest level of education on the survey. Their responses were cross tabulated by job classifications. Table 8 reports the results of this analysis.

Table 8

Crosstabulations

Highest Educational Level by Teachers' Job Classification

Educational Level	Job Classification								Total	
	Teacher		Counselor		Administration		Paraprofessional			
	N	%	N	%	N	%	N	%	N	%
Diploma /GED	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Associate Degree	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Some College	0	0.0	0	0.0	0	0.0	1	100.0	1	1.3
Bachelor Degree	34	47.9	0	0.0	0	0.0	0	0.0	34	42.5
Master Degree	22	31.0	4	80.0	1	33.3	0	0.0	27	33.8
Master +30	13	18.3	1	20.0	1	33.3	0	0.0	15	18.8
Ed. Spec.	0	0.0	0	0.0	1	33.3	0	0.0	1	1.3
Ed.D/Ph.D.	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Professional Degree	2	2.8	0	0.0	0	0.0	0	0.0	0	0.0
Total	71	88.7	5	6.2	3	3.8	1	1.2	80	100.0

Missing 0

Analysis of the highest educational levels of teachers by job classifications showed that 34 (47.9%) classroom teachers reported completion of a bachelor's degree, 22 (31.0) a master's degree, 13 (18.3%) a master's degree + 30 hrs, and 2 (2.8%) with other professional degrees. Four (80%) counselors reported completion of a master's degree and 1 (20%) a master's degree + 30 hrs. One (33.3%) administrator reported completion of a master's degree, 1 (33.3%) a master's degree + 30 hrs, and 1 (33.3%) an education specialist degree. One (100%) paraprofessional reported completion of some college credits. Further analysis shows that classroom teachers having master's degrees or higher

(n=37, 52.1%) represented the largest group of participants by highest level of education.

Teachers were asked if they had completed two professional development experiences – job shadowing and integrating curriculum. Their responses were summarized using frequency distributions. The results of this analysis are reported in Table 9.

Table 9

Frequency Distributions
Participation in Staff Development Activities

Type of Staff Development Activities	Frequency	Percent
Job Shadowing		
Yes	15	19.0
No	64	81.0
Total	79	100.0
(Missing 1)		
Integrating Curriculum		
Yes	39	48.7
No	41	51.2
Total	80	100.0
Missing 0)		

The majority of teachers (n=64, 81.0%) reported they had not participated in job shadowing. Fifteen (19.0%) reported they had participated. One teacher did not respond to this question.

Forty-one (51.2%) teachers reported they had not participated in inservice for integrating curriculum. Thirty-nine (48.7) reported they had participated.

Employers

Employer participants in the study completed a brief demographic survey. Their responses are divided into three sections: personal characteristics (questions 67, 68, and 69), business characteristics (questions 55, 56-57, and 65- 66), and their relationship with

the Walled Lake Consolidated School District (questions 58-64). Each section is reported separately.

Personal characteristics.

Employers were asked to indicate their gender on the survey. Their responses were summarized using frequency distributions. The results of this analysis are reported in Table 10.

Table 10

Frequency Distribution
Gender of Employers

Gender of Employers	Frequency	Percent
Male	50	55.6
Female	40	44.4
Total	90	100.0

Missing 4

The majority of employers (n=50, 55.6%) reported their gender as male. Forty employers (44.4%) reported their gender as female. Four employers did not respond to this question.

Employers were asked to respond to their highest level of education. Responses were summarized using frequency distributions. The results of this analysis is reported in Table 11.

Table 11

Frequency Distribution
Highest Educational Level of Employers

Highest Educational Level	Frequency	Percent
High School Diploma/GED	7	7.4
Associate Degree	11	11.7
Some College	18	19.1
Bachelor Degree	31	4.0
Master Degree	12	12.8
Master Degree + 30	1	1.0
Ph.D.	0	0.0
Ed.D.	0	0.0
Other Professional Degree	14	15.0
Total	94	100.0

The majority of employers (n=31, 40%) indicated a bachelor's degree as their highest level of education. Seven (7.4%) indicated a high school diploma or G.E.D., 11 (11.7%) indicated an associate's degree, 18 (19.1%) indicated having some college courses, 12 (12.8%) indicated a master's degree, 1 (1%) a master's + 30 hrs, and 14 (15%) indicated other professional degree.

Business characteristics.

Employers were asked to identify how long they had been in business from four forced choice responses ranging from 1 to 5 years to 20 years or more . Their responses were summarized using frequency distributions. The results of this analysis is reported in Table 12.

Table 12

Frequency Distributions
Number of Years in Business

Number of Years in Business	Frequency	Percent
1 to 5 years	13	14.6
6 to 12 years	17	19.1
13 to 19 years	13	14.6
20 years or more	46	51.7
Total	89	100.0

Missing 5

The majority of employers (n=46, 51.7%) reported they had been in business 20 years or more. Thirteen employers (14.6%) reported 1 to 5 years in business, 17 (19.1%) reported 6 to 12 years, 13 (14.6%) reported 13 to 19 years. Six employers did not respond to this question.

Employers were asked to report the number of people in their employ from seven forced choice responses that ranged from less than 25 to more than 500 employees. Their responses were summarized using frequency distributions. The results of this analysis is reported in Table 13.

Table 13

Frequency Distributions
Number of Employees

Number of Employees	Frequency	Percent
Less than 25	56	61.5
26 to 50	3	4.0
51 to 100	12	13.1
101 to 150	5	5.4
151 to 350	8	9.0
351 to 500	1	1.0
More than 500	6	7.0
Total	91	100.0

Missing 3

The majority of employers (n=56, 61.5%) reported having fewer than 25 employees. Three (4%) reported fewer than 50, 12 (13.1%) reported between 50 and 100, 5 (5.4%) reported between 100 and 150, 8 (9%) reported between 150 and 350, 1 (1%) reported between 350 and 500, and 6 (7%) reported more than 500 employees. Three employers did not respond to this question.

Employers were asked to indicate their primary industry or occupation. Their responses on the survey were recoded into the following occupations: finance, construction, health services, manufacturing, retail-wholesale trade, services (other than health) and other occupations. These occupations were summarized using frequency distributions. The results of this analysis are reported in Table 14. Further analysis was completed in a cross tabulation of occupations by highest level of education. The results of this analysis are reported in Table 15.

Table 14

Frequency Distributions
Occupations of Employers

Occupations of Employers	Frequency	Percent
Finance/Insurance/Real Estate	24	27.3
Construction	9	10.2
Health Services	10	11.4
Manufacturing	6	6.8
Retail-Wholesale	15	17.0
Services (Other than Health)	14	15.9
Other Occupations	10	11.4
Total	88	100.0

Missing 6

The responses indicated that the largest occupational group (n=24, 27.3%) responding to the survey were in finance/insurance/real estate. Nine (10.2%) were in the construction business, 10 (11.4%) in health services, 6 (6.8%) in manufacturing, 15 (17%) in retail-wholesale trade, and 14 (15.9%) in services other than health. Ten (11.4%) reported their occupations as "other" including agriculture/forestry/fishing (n=1), transportation/public utility (n= 3) and unidentified occupations (n=6). Six employers did not respond to this question.

Table 15

Frequency Distributions
Occupations of Employers by Educational Level

Occupations of Employers	Educational Level														Total	
	Diploma/GED		Assoc. Deg.		Some College		Bachelor Degree		Master Degree		Master + 30		Other Professional Degree			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Finance/ Insurance/ Real Estate	0	0.0	4	16.6	8	33.3	6	25.0	2	8.3	0	0.0	4	16.6	24	27.3
Construction	0	0.0	1	11.1	2	22.2	5	55.5	0	0.0	0	0.0	0	0.0	9	10.2
Health Services	0	0.0	0	0.0	1	10.0	0	0.0	0	0.0	0	0.0	9	90.0	10	11.4
Manufacturing	0	0.0	1	16.6	4	66.6	1	16.6	0	0.0	0	0.0	0	0.0	6	6.8
Retail-Wholesale	0	0.0	2	13.3	4	26.6	7	46.6	1	6.6	0	0.0	0	0.0	15	17.0
Services (Other than Health)	2	14.2	2	14.2	1	7.1	5	35.7	3	21.4	1	7.1	0	0.0	14	15.9
Other Occupations	3	30.0	2	20.0	2	20.0	0	0.0	3	30.0	0	0.0	0	0.0	10	11.4
Total	5	5.6	11	12.5	18	20.4	28	31.8	10	11.3	1	1.1	15	17.0	88	100.0

Missing 6

Further analysis of occupations of employers cross tabulated by highest level of education showed that over 85% of the identified occupations reported having more than a high school diploma. Bachelor's degrees were reported highest (n=7) in wholesale-retail trade followed by finance/insurance/real estate (n=6), construction (n=5), other services (n=5), manufacturing (n=4), and health services (n=1). The majority of employers in health services (n=9) reported having other professional degrees. Also reporting other professional degrees were finance (n=4), construction (n=1) and wholesale-retail trade (n=1).

Relationship with the Walled Lake Consolidated School District. Employers were asked if they hired graduates for full-time positions. Their responses were summarized using frequency distributions. The results of this analysis are reported in Table 16.

Table 16

Frequency Distributions
Hire Full-Time Graduates

Hire Full-Time Graduates	Frequency	Percent
Yes	49	68.1
No	23	31.9
Total	72	100.0

Missing 22

The majority of employers (n=49, 68.1%) responded that they did hire full-time graduates of the Walled Lake school district. Twenty-three (31.9%) responded they did not. Twenty-two employers did not respond to this question.

Employers were asked if they hired students for part-time positions. Their responses were summarized using frequency distributions. The results of this analysis are reported in Table 17.

Table 17

Frequency Distributions
Hire Part-Time Students

Hire Part-time Students	Frequency	Percent
Yes	50	64.9
No	27	31.1
Total	77	100.0

Missing 23

The majority of employers (n=50, 64.9%) responded that the did hire students from the school district for part-time employment. Twenty-seven (31.1%) responded they did not. Seventeen employers did not respond to this question.

Employers were asked if they hired students for co-op or work experience. Their responses were summarized using frequency distributions. Results of this analysis are reported in Table 18.

Table 18

Frequency Distributions
Hire Co-op or Work Experience Students

Hire Co-op or Work Experience Students	Frequency	Percent
Yes	42	56.0
No	33	44.0
Total	75	100.0

Missing 19

The majority of employers (n=42, 56%) responded that they did hire co-op or work experience students from the school district. Thirty-three (44%) responded they did not. Nineteen employers did not respond to this question.

Employers were asked if they provided job shadowing or internship experiences for teachers. Their responses were summarized using frequency distributions. The results

of this analysis is reported in Table 19.

Table 19

Frequency Distributions
Provided Job Shadowing or Internships for Teachers

Provided job shadowing or internships for teachers	Frequency	Percent
Yes	6	9.1
No	60	90.9
Total	66	100.0

Missing 28

The majority of employers (n=60, 90.9%) responded that they provided job shadowing or internships for teachers. Six (9.1%) responded they did not. Twenty-eight employers did not respond to this question.

Employers were asked if they had served on a school committee within the last 3 years. Their responses were summarized using frequency distributions. The results of this analysis are reported in Table 20.

Table 20

Frequency Distributions
Served on School Committees Within Last Three Years

Served on School Committees Within Last Three Years	Frequency	Percent
Yes	8	11.9
No	59	88.1
Total	67	100.0

Missing 27

The majority of employers (n=59, 88.1%) responded that they had not served on a school committee within the last three years. Eight employers (11.9% indicated they had

served. Twenty-seven employers did not respond to this question.

Employers were asked if they had visited a high school within the last 3 years. Their responses were summarized using frequency distributions. The results of this analysis are reported in Table 21.

Table 21

Frequency Distributions
Visited a High School Within the Last Three Years

Visited a High School Within the Last Three Years	Frequency	Percent
Yes	32	43.8
No	41	56.2
Total	73	100.0

Missing 21

The majority of employers (n=41, 56.2%) responded that they had not visited a high school within the last three years. Thirty-two (43.8%) indicated they had. Twenty-one employers did not respond to this question.

Employers were asked if they or a child had attended a Walled Lake School. Their responses were summarized using frequency distributions. The results of this analysis are reported in Table 22.

Table 22

Frequency Distributions
Employer or Children Attended or Attending a Walled Lake School

Employer or Children Attending or Attended a Walled Lake School	Frequency	Percent
Yes	23	31.1
No	51	68.9
Total	74	100.0

Missing 20

The majority of employers (n=51, 68.9%) responded neither they nor children attend a school within the district. Twenty-three (31.1%) responded they or children had attended. Twenty employers did not respond to this question

Description of Skill Areas

Teachers and employers were asked to respond to the importance and frequency of 27 workplace competencies and skills within seven skill areas. Responses were calculated separately for each skill area by summarizing the responses to each competency, dividing by the number of items within each skill area, and subtracting the number of omitted items thereby arriving at the mean score of valid responses. Descriptive statistics on the importance of the skill areas for each population are reported in Table 23, followed by a summary of the analysis.

Table 23

Descriptive Statistics
Perceptions of the Importance of Skill Areas by Type of Respondent

Skill Area	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Basic Skills						
Teacher	80	3.71	.56	4.00	1.20	4.00
Employer	91	3.73	.36	3.80	2.20	4.00
Thinking Skills						
Teacher	80	3.70	.57	4.00	1.00	4.00
Employer	90	3.62	.45	3.75	2.25	4.00
Personal Qualities						
Teacher	80	3.80	.52	4.00	1.00	4.00
Employer	91	3.74	.45	4.00	1.50	4.00
Resource Skills						
Teacher	80	3.33	.75	3.50	1.00	4.00
Employer	90	3.11	.70	3.25	1.00	4.00
Systems/Technology Skills						
Teacher	80	3.37	.68	4.00	1.00	4.00
Employer	90	3.28	.76	3.33	1.00	4.00
Informational Skills						
Teacher	80	3.58	.68	4.00	1.00	4.00
Employer	91	3.28	.76	3.33	1.00	4.00
Interpersonal Skills						
Teacher	80	3.54	.64	3.80	1.00	4.00
Employer	91	3.55	.55	3.80	1.00	4.00

Importance of Workplace Skills

Teachers and employers were asked to rate between 2 and 5 competencies within the following skill areas using a four choice forced response scale indicating the importance of these skills in the classroom or in the workplace. Choices within the response scale were: no importance, little importance, some importance or very important. The mean score of valid responses was used to determine the importance given to each skill by both groups of respondents.

Basic skills. Competencies in the basic skills component included reading, writing,

arithmetic, speaking and listening. The mean of valid responses by teachers was 3.71 (sd=.56), with a median score of 4.00. The mean of valid responses by employers was 3.73 (sd=.36), with a median score of 3.80. Scores of employers ranged from 2.20 to 4.00 and scores of teachers ranged from 1.20 to 4.00. A score of 2.50 or higher indicated that basic skills were perceived as moderately important to very important.

Thinking skills. Four competencies were included in this skill--creative thinking, decision-making, problem-solving, and knowing how to learn. The mean of valid responses for this skill by teachers was 3.70 (sd=.57), with a median score of 4.00. The mean of valid responses of employers was 3.62 (sd=.45), with a median score of 3.75. Scores of employers ranged from 2.25 to 4.00 and scores of teachers ranged from 1.00 to 4.00. A score of 2.50 or higher indicated that thinking skills were perceived as moderately important to very important.

Personal qualities. This skill included four competencies--responsibility, social skills, self-management, and honesty/integrity. The mean of valid responses by teachers was 3.80 (sd=.52), with a median score of 4.00. The mean of valid responses by employers was 3.74 (sd=.45), with a median score of 4.00. Scores of employers ranged from 1.00 to 4.00 and scores of teachers ranged from 1.00 to 4.00. A score of 2.50 or higher indicated that personal qualities were perceived as moderately important to very important.

Resource skills. The four competencies included in this skill were manages time, manages money, manages material and facility resources, and manages human resources. The mean of valid responses by teachers was 3.33 (sd=.75), with a median score of 3.50. The mean of valid responses by employers was 3.11 (sd=.70 with a median score of 3.25.

Scores of both employers and teachers ranged from 1.00 to 4.00 on this skill. A score of 2.50 or higher indicated that resource skills were perceived as moderately important to very important.

Systems and technology. Two competencies were included in this skill–understands systems and uses technology. The mean of valid responses by teachers was 3.37 (sd=.82), with a median score of 3.500. The mean of valid responses by employers was 3.21 (sd=.90), with a median score of 3.50. Scores of both employers and teachers ranged from 1.00 to 4.00. A score of 2.50 or higher indicated that systems and technology skills were perceived as moderately important to very important.

Informational skills. Three competencies were included in this skill--acquires and evaluates information, organizes and maintains information, and interprets and communicates information. The mean of valid responses by teachers was 3.58 (sd=.68), with a median score of 4.00. The mean of valid responses by employers was 3.28 (sd= .76), with a median score of 3.33. Scores of both teachers and employers ranged from 1.00 to 4.00. A score of 2.50 or higher indicated that informational skills were perceived as moderately important to very important.

Interpersonal skills. Five competencies were included in this skill--participates as a member of a team, teaches others, serves clients/customers, exercises leadership, and works with cultural diversity. The mean score of valid responses by teachers was 3.54 (sd=.64), with a median score of 3.80. The mean of valid responses by employers was 3.55 (sd=.55), with a median score of 3.80. Scores of teachers ranged from 1.00 to 4.00 and scores of employers ranged from 1.20 to 4.00. A score of 2.50 or higher indicated that interpersonal skills were perceived as moderately important to very important.

Frequency of Workplace Skills

Teachers and employers were asked to rate between 2 and 5 competencies within the following skill areas using a five choice forced response scale indicating frequency of teaching or using workplace skills in the classroom or in the workplace. The response scale included the following choices: never, seldom, sometimes, often, and very often. The mean score of valid responses was used to determine the frequency given to each skill by both groups of respondents. Table 24 presents the results of these analyses.

Table 24

Descriptive Statistics
Frequency With Which Skill Areas Are Taught by Type of Respondent

Skill Area	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Basic Skills						
Teacher	80	3.93	.67	4.00	1.80	5.00
Employer	92	4.36	.64	4.40	2.40	5.00
Thinking Skills						
Teacher	80	3.77	.79	3.75	2.00	5.00
Employer	92	4.11	.78	4.25	2.25	5.00
Personal Qualities						
Teacher	80	4.02	.78	4.00	2.00	5.00
Employer	93	4.42	.68	4.50	1.50	5.00
Resource Skills						
Teacher	80	3.06	.97	2.88	1.50	5.00
Employer	92	3.48	.96	3.50	1.00	5.00
Systems/Technology Skills						
Teacher	80	3.12	1.04	3.00	1.00	5.00
Employer	92	3.58	1.21	4.00	1.00	5.00
Informational Skills						
Teacher	80	3.55	1.01	3.67	1.33	5.00
Employer	93	3.75	1.06	4.00	1.00	5.00
Interpersonal Skills						
Teacher	80	3.50	.91	3.30	1.80	5.00
Employer	93	4.18	.77	4.20	1.40	5.00

Basic skills. Competencies in the basic skills component included reading, writing, arithmetic, speaking and listening. The mean of valid responses by teachers was 3.94 (sd=.67), with a median score of 4.00. The mean of valid responses by employers was 4.36 (sd=.64), with a median score of 4.40. The range of scores for teachers was 1.800 to 5.000; the range for employers was 2.40 to 5.00. A score of 3.00 or higher indicated that basic skills were used sometimes to used very often.

Thinking skills. Four competencies were included in this skill – creative thinking, decision-making, problem-solving, and knowing how to learn. The mean of valid responses for this skill by teachers was 3.77 (sd=.79), with a median score of 3.75. The mean of valid responses of employers was 4.11 (sd=.78), with a median score of 4.25. The range of scores for teachers was 2.00 to 5.00; the range for employers was 2.25 to 5.00. A score of 3.00 or higher indicated that thinking skills were perceived as used sometimes to used very often.

Personal qualities. This skill included four competencies--responsibility, social skills, self-management, and honesty/integrity. The mean of valid responses by teachers was 4.02 (sd=.78), with a median score of 4.00. The mean of valid responses by employers was 4.42 (sd=.68), with a median score of 4.50. The range of scores for teachers was 2.00 to 5.00; the range for employers was 1.50 to 5.00. A score of 3.00 or higher indicated that personal qualities were perceived as used sometimes to used very often.

Resource skills. The four competencies included in this skill were manages time, manages money, manages material and facility resources, manages human resources. The mean of valid responses by teachers was 3.06 (sd=.97), with a median score of 2.88. The

mean of valid responses by employers was 3.48 (sd=.96), with a median score of 3.50. The range of scores for teachers was 1.50 to 5.00; the range for employers was 1.00 to 5.00. A score of 3.00 or higher indicated that resource skills were perceived as used sometimes to used very often.

Systems and technology. Two competencies were included in this skill – understands systems and uses technology. The mean of valid responses by teachers was 3.12 (sd=1.04), with a median score of 3.50. The mean of valid responses by employers was 3.58 (sd=1.21), with a median score of 4.50. The range of scores for both teachers and employers was 1.00 to 5.00 on this skill. A score of 3.00 or higher indicated that systems and technology skills were perceived as used sometimes to used very often.

Informational skills. Three competencies were included in this skill – acquires and evaluates information, organizes and maintains information, and interprets and communicates information. The mean of valid responses by teachers was 3.56 (sd=1.01), with a median score of 3.67. The mean of valid responses by employers was 3.75 (sd=1.06), with a median score of 4.00. The range of scores for teachers was 1.33 to 5.00; the range for employers was 1.00 to 5.00. A score of 3.00 or higher indicated that informational skills were perceived as used sometimes to used very often.

Interpersonal skills. Five competencies were included in this skill – participates as a member of a team, teaches others, serves clients/customers, exercises leadership, and works with cultural diversity. The mean score of valid responses by teachers was 3.50 (sd=.91), with a median score of 3.30. The mean of valid responses by employers was 4.18 (sd=.77), with a median score of 4.20. The range of scores for teachers was 1.80 to 5.00; the range for employers was 1.40 to 5.00. A score of 3.00 or more indicated that

interpersonal skills were perceived as used sometimes to used very often.

Analysis of Inferential Statistical Procedures

Research questions and hypotheses.

Six research questions and research hypotheses were developed for this study. The hypotheses were tested at the .05 alpha level of significance. The decision to reject or fail to reject the hypothesized statements was determined by the findings of statistically significant differences on measured variables in the study.

Research Question 1:

Do teachers of identified disciplines have different perceptions of the importance of skills needed for the workplace?

Research Hypothesis 1:

There is a statistically significant difference among teachers of identified disciplines in the perceptions of the importance of skills needed for the workplace.

Disciplines identified by teachers on the survey were recoded into four categories of curriculum: core academics, electives, business/voc/tech education, and special services. These disciplines of teachers in addition to the selection of "question not applicable" were used as independent variables in a Kruskal-Wallis One-Way Analysis of Variance, with the mean scores on each of the seven skills areas used as the dependent variable. The results of this analysis is reported in Table 25

Table 25

Kruskal-Wallis One-Way Analysis of Variance
Perceptions of the Importance of Skill Areas by Disciplines of Teachers

Skill Area	Number	Mean	SD	Mean Rank	Chi Square
Basic Skills					
Core Academic	44	3.69	.64	40.69	.11 (NS)
Electives	15	3.51	.63	28.87	
Business/Voc/Tech Ed	6	3.93	.10	49.33	
Special Services	6	3.90	.24	50.92	
Question Not Applicable	9	3.91	.10	46.11	
Thinking Skills					
Core Academic	44	3.70	.56	40.08	3.77 (NS)
Electives	15	3.55	.84	38.33	
Business/Voc/Tech Ed	6	4.00	.00	55.50	
Special Services	6	3.75	.32	37.17	
Question Not Applicable	9	3.75	.33	38.39	
Personal Qualities					
Core Academic	44	3.80	.51	40.08	3.65 (NS)
Electives	15	3.62	.78	34.70	
Business/Voc/Tech Ed	6	3.92	.13	40.67	
Special Services	6	3.96	.10	46.33	
Question Not Applicable	9	3.97	.08	48.22	
Resource Skills					
Core Academic	44	3.28	.73	37.75	4.14 (NS)
Electives	15	3.07	1.02	36.73	
Business/Voc/Tech Ed	6	3.75	.22	51.83	
Special Services	6	3.50	.69	46.25	
Question Not Applicable	9	3.64	.44	48.83	
Systems/Tech Skills					
Core Academic	44	3.33	.80	38.10	9.73*
Electives	15	2.90	1.07	31.03	
Business/Voc/Tech Ed	6	3.83	.26	53.17	
Special Services	6	3.67	.52	48.17	
Question Not Applicable	9	3.83	.35	54.44	
Information Skills					
Core Academic	44	3.51	.75	39.69	6.62 (NS)
Electives	15	3.42	.77	31.20	
Business/Voc/Tech Ed	6	3.83	.41	50.17	
Special Services	6	3.78	.40	45.42	
Question Not Applicable	9	3.89	.24	50.22	

Interpersonal Skills					
Core Academic	44	3.46	.64	36.88	3.94 (NS)
Electives	15	3.45	.81	39.90	
Business/Voc/Tech Ed	6	3.83	.20	49.33	
Special Services	6	3.77	.32	47.08	
Question Not Applicable	9	3.67	.66	48.94	

*p≤05

The statistical procedure presented in Table 25 was used to determine if there were differences in perceptions of the importance of the seven skill areas by teachers based on the disciplines they teach most of the time. Results of the procedure produced significant findings in one of the skill areas as indicated below:

Systems/technology skills: The obtained chi-square value of 9.729 was statistically significant (.045) at the .05 alpha level and 4 degrees of freedom. Teachers in the category of "question not applicable" had a mean rank of 54.44 indicating their perceptions of the importance of teaching technology skills were higher than perceptions held by teachers of curriculum. The "question not applicable" group included counselors, administrators and one classroom paraprofessional. Teachers in the elective disciplines (health and physical education, fine and performing arts, and world languages) had a mean rank of 31.03 indicating that they perceived systems/technology skills less important than teachers in the other disciplines.

There were no statistically significant differences in the perceptions of teachers by disciplines of the importance of the remaining six skill areas. As a result of the nonsignificant findings, the null hypothesis of no statistically significant differences cannot be rejected.

Research Question 2:

Is there a difference in employer and teacher perceptions of the importance

of skills needed for the workplace?

Research Hypothesis 2:

There is a statistically significant difference between the perceptions of employers and teachers of the importance of skills needed for the workplace.

The perceptions of employers were compared with the perceptions of teachers on the importance of the seven workplace competencies and skills to determine if there were differences between the two types of respondents. These comparisons were tested using t-test for two independent samples. The results of this analysis are reported in Table 26.

Table 26

t-Test for Two Independent Samples
Perceptions of Importance of Skill Areas by Type of Respondent

Skill Area	Number	Mean	SD	DF	t-Value
Basic Skills					
Employer	91	3.73	.36	130.39	.26 (NS)
Teacher	80	3.71	.56		
Thinking Skills					
Employer	90	3.62	.45	148.94	-1.10 (NS)
Teacher	80	3.70	.57		
Personal Qualities					
Employer	91	3.74	.45	169	-.87 (NS)
Teacher	80	3.80	.52		
Resource Skills					
Employer	90	3.11	.70	168	-1.98*
Teacher	80	3.33	.75		
Systems/Technology					
Employer	90	3.21	.90	168	-1.23 (NS)
Teacher	80	3.36	.82		
Information Skills					
Employer	91	3.28	.76	169	-2.74*
Teacher	80	3.59	.68		
Interpersonal Skills					
Employer	91	3.55	.55	171	1.27 (NS)
Teacher	80	3.54	.64		

*p≤.05

The statistical procedure presented in Table 26 was used to determine points of agreement between employers and teachers on perceptions of the importance of the seven skill areas for the workplace. Results of the procedure produced significant findings in two of the seven skill areas as indicated below:

Information skills: The t-value of -2.74 provided statistical significance (two-tail P=.007) at the .05 alpha level and 169 degrees of freedom. These results indicate that teachers (m=3.58, sd=.68) perceived that information skills were more important in the classroom than they were perceived by employers (m=3.28 sd=.76) in the workplace.

Resource skills: The t-value of -1.98 provided statistical significance (two-tail P=.050) at the .05 alpha level and 168 degrees of freedom. These results indicate that teachers (m=3.33, sd=.75) perceived resource skills were more important in the classroom than they were perceived by employers (m=3.11, sd=.70in the workplace.

There were no statistically significant differences between the perceptions of teachers and employers on the remaining five skill areas. As a result of this analysis the null hypothesis of no statistically significant differences cannot be rejected.

Research Question 3:

> Do teachers who completed staff development experiences have different perceptions of the importance of skills needed for the workplace than those who did not complete these experiences?

Research Hypothesis 3:

> There is a statistically significant difference in perceptions of teachers who completed staff development experiences and those who did not complete these experiences on the importance of skills needed for the workplace.

The mean scores of responses to the importance of skills needed for the workplace by

teachers who completed job shadowing and staff development to develop integrated curriculum were compared with teachers who did not complete these experiences to determine if there was a difference between the types of respondents. Comparisons of the perceptions of teachers who completed staff development to develop integrated curriculum were tested using t-tests for independent samples. Those who completed the staff development experience responded yes, those who did not responded no. The results of this analysis are reported in Table 27

Table 27

t-Test for Two Independent Samples
Perceptions of Importance of Skill Areas by
Staff Development Experience – Integrating Curriculum

Skill Area	Number	Mean	SD	DF	t-Value
Basic Skills					
Yes	39	3.74	.50	78	.40 (NS)
No	41	3.69	.62		
Thinking Skills					
Yes	39	3.74	.59	78	.52 (NS)
No	41	3.67	.56		
Personal Qualities					
Yes	39	3.81	.54	78	.18 (NS)
No	41	3.79	.50		
Resource Skills					
Yes	39	3.32	.79	78	-.12 (NS)
No	41	3.34	.73		
Systems/Technology Skills					
Yes	39	3.31	.83	78	-.65 (NS)
No	41	3.43	.82		
Information Skills					
Yes	39	3.56	.74	78	-.35 (NS)
No	41	3.61	.63		
Interpersonal Skills					
Yes	39	3.55	.64	78	.19 NS)
No	41	3.52	.65		

Results of the statistical procedure presented in Table 27 were used to determine if completion of staff development to develop integrated curriculum made a difference in the perceptions of teachers on the importance of skills needed for the workplace.

The t-value obtained in all seven skill areas showed no significant difference in perceptions of their importance among the teachers who completed staff development for integrated curriculum and those teachers who did not.

A Mann-Whitney U test for Independent Samples was used to test comparisons of perceptions of teachers who completed job shadowing. Those who completed a job

shadowing experience responded yes, those who did not responded no. The result of this analysis is reported in Table 28.

Table 28

Mann-Whitney U Test for Independent Samples
Perceptions of Importance of Skill Areas by
Staff Development Experience – Job Shadowing

Skill Area	Number	Mean	SD	Mean Rank	Z-Value
Basic Skills					
Yes	15	3.67	.67	39.70	-.06 (NS)
No	64	3.71	.54	40.07	
Thinking Skills					
Yes	15	3.83	.29	43.17	-.68 (NS)
No	64	3.67	.62	39.26	
Personal Qualities					
Yes	15	3.85	.23	36.80	-.75 (NS)
No	64	3.79	.57	40.75	
Resource Skills					
Yes	15	3.33	.74	39.17	-.16 (NS)
No	64	3.32	.76	40.20	
Systems/Technology Skills					
Yes	15	3.40	.57	37.30	-.54 (NS)
No	64	3.35	.88	40.63	
Information Skills					
Yes	15	3.69	.41	40.27	-.06 NS)
No	64	3.55	.74	39.94	
Interpersonal Skills					
Yes	15	3.53	.52	38.37	-.39 (NS)
No	64	3.53	.67	40.38	

Results of the statistical procedure presented in Table 28 were used to determine if completion of a job shadowing experience made a difference in perceptions of teachers on the importance of skills needed for the workplace.

The Z value obtained in all seven skill areas showed no significant difference in perceptions of their importance among teachers who completed job shadowing and those

who did not.

As a result of the nonsignificant findings in the analysis of data for both staff development experiences – in-service for integrated curriculum and job shadowing, the null hypothesis of no statistically significant differences cannot be rejected.

Research Question 4:

Do employers of identified occupations have different perceptions of the skills needed for the workplace?

Research Hypothesis 4:

There is a statistically significant difference in the perceptions of employers of identified occupations of the importance of skills needed for the workplace.

The mean scores of employer responses on the survey to the importance of the seven skill areas were used as dependent variables in a Kruskal-Wallis One-Way Analysis of Variance. The recoded occupational categories of employers were used as the independent variable. Results of this analysis is reported in Table 29.

Table 29

Kruskal-Wallis One-Way Analysis of Variance
Perceptions of the Importance of Skill Areas by Occupation/Industry of Employer

Skill Area	Number	Mean	SD	Mean Rank	Chi Square
Basic Skills					
Fin/Ins/Real Estate	23	3.89	.20	54.35	14.27*
Construction	9	3.56	.34	28.39	
Health Services	10	3.80	.33	48.75	
Manufacturing	6	3.33	.62	22.42	
Wholesale/Retail Trade	14	3.74	.28	39.82	
Services (Other)	14	3.77	.29	43.89	
Other Occupations	10	3.67	.52	44.15	
Thinking Skills					
Fin/Ins/Real Estate	22	3.63	.40	42.20	3.63 (NS)
Construction	9	3.44	.51	34.33	
Health Services	10	3.68	.39	44.40	
Manufacturing	6	3.25	.82	32.92	
Wholesale/Retail Trade	14	3.64	.45	44.36	
Services (Other)	14	3.73	.36	48.89	
Other Occupations	10	3.70	.42	47.05	
Personal Qualities					
Fin/Ins/Real Estate	22	3.85	.25	49.70	11.99 NS)
Construction	9	3.69	.24	32.33	
Health Services	10	3.93	.17	55.50	
Manufacturing	6	3.21	.91	23.25	
Wholesale/Retail Trade	15	3.63	.64	39.67	
Services (Other)	14	3.84	.21	46.36	
Other Occupations	10	3.68	.51	41.80	
Resource Skills					
Fin/Ins/Real Estate	22	3.05	.70	40.07	2.86 (NS)
Construction	9	2.97	.76	38.11	
Health Services	10	3.20	.62	44.55	
Manufacturing	5	3.10	1.13	46.90	
Wholesale/Retail Trade	15	3.33	.65	50.13	
Services (Other)	14	3.21	.58	45.04	
Other Occupations	10	2.90	.88	36.80	
Systems/Tech Skills					
Fin/Ins/Real Estate	22	3.14	.94	41.77	2.14 (NS)
Construction	9	2.89	1.27	38.83	
Health Services	10	3.05	.76	35.95	
Manufacturing	5	3.30	.76	43.30	
Wholesale/Retail Trade	15	3.33	.90	47.30	
Services (Other)	14	3.32	.91	46.82	
Other Occupations	10	3.30	.89	44.55	
Information Skills					
Fin/Ins/Real Estate	22	3.45	.73	49.27	5.61 (NS)
Construction	9	3.00	.80	33.22	
Health Services	10	3.50	.61	50.00	
Manufacturing	6	3.17	.62	35.92	
Wholesale/Retail Trade	15	3.00	.98	37.23	
Services (Other)	14	3.29	.78	42.57	
Other Occupations	10	3.47	.63	48.80	

Table 29 (Continued)

Kruskal-Wallis One-Way Analysis of Variance
Perceptions of the Importance of Skill Areas by Occupation/Industry of Employer

Skill Area	Number	Mean	SD	Mean Rank	Chi Square
Interpersonal Skills					
Fin/Ins/Real Estate	22	3.63	.39	42.91	3.90 (NS)
Construction	9	3.38	.57	34.28	
Health Services	10	3.70	.32	46.30	
Manufacturing	6	3.33	.71	35.33	
Wholesale/Retail Trade	15	3.61	.78	51.50	
Services (0ther)	14	3.67	.33	44.82	
Other Occupations	10	3.48	.69	41.35	

*p≤05

The statistical procedure presented in Table 29 was used to determine the differences in perceptions of the importance of the seven skill areas by employers from different industries or occupations. Results of the procedure produced significant findings in one of the skill areas, basic skills.

Basic skills. The obtained chi-square value of 14.27 was statistically significant (.026) at the .05 alpha level and 6 degrees of freedom. Employers in the finance/insurance/real estate industries had a mean rank of 54.35 indicating their perceptions of the importance of basic skills were higher than perceptions held by employers in the other industries. Employers in the construction industry had a mean rank of 28.39 indicating that they perceived basic skills less important than employers in the other industries. There were no statistically significant differences in the perceptions of employers from different occupations or industries on the importance of the remaining six skill areas. As a result of the nonsignificant findings, the null hypothesis of no statistically significant differences cannot be rejected.

Research Question 5:

Is there a difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the

workplace?

Research Hypothesis 5:

There is a statistically significant difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace.

The mean scores of the perceptions of employers and teachers were compared on the frequency of using or teaching the seven workplace skills to determine if there was a difference between the two types of respondents. A t-Test for Independent Samples was used to test these comparisons. Results of this analysis are reported in Table 30.

Table 30

t-Tests for Two Independent Samples
Perceptions of Frequency of Skill Areas by Type of Respondent

Skill Area	Number	Mean	SD	DF	t-Value
Basic Skills					
Employer	92	4.36	.64	170	4.37*
Teacher	80	3.93	.67		
Thinking Skills					
Employer	92	4.11	.78	170	2.89*
Teacher	80	3.77	.79		
Personal Qualities					
Employer	93	4.42	.68	171	3.66*
Teacher	80	4.02	.78		
Resource Skills					
Employer	92	3.48	.96	170	2.91*
Teacher	80	3.06	.97		
Systems/Technology					
Employer	92	3.58	1.21	170	2.64*
Teacher	80	3.12	1.04		
Information Skills					
Employer	93	3.75	1.06	171	1.27 (NS)
Teacher	80	3.55	1.01		
Interpersonal Skills					
Employer	93	4.18	.77	171	5.31*
Teacher	80	3.50	.91		

*p≤.05

The statistical procedure presented in Table 30 was used to determine points of agreement between the perceptions of teachers and employers on the frequency of using the seven skill areas in the classroom and in the workplace. Results of the procedure produced significant findings in six of the seven skill areas as indicated below:

Basic skills: The t-value of 4.37 provided statistical significance (two tail p=.000) at the .05 alpha level and 170 degrees of freedom. These results indicate that teachers (m=3.93, sd=.67) perceived basic skills were taught or used less often than employers (m=4.361, sd=.64).

Thinking skills: The t-value of 2.89 provided statistical significance (two tail P=.004) at the .05 alpha level and 170 degrees of freedom. These results indicate that teachers (m=3.77, sd=.79) perceived thinking skills were taught or used less often than employers (m=4.11, sd=.78).

Personal qualities: The t-value of 3.66 provided statistical significance (two tail P=.000) at the .05 alpha level and 171 degrees of freedom. These results indicate that teachers (m=4.02, sd=.78) perceived personal qualities were used or taught less often than employers (m=4.42, sd=.68).

. *Resource skills*: The t-value of 2.91 provided statistical significance (two tail P=.004) at the .05 alpha level and 170 degrees of freedom. The results indicate that teachers (m=3.06, sd=.97) perceived resource skills were taught or used less often than employers (m=3.48, sd=.97.

Systems/Technology skills: The t-value of 2.64 provided statistical significance (two tail P=.009) at the .05 alpha level and 170 degrees of freedom. The results indicate that teachers (m=3.12, sd=1.04) perceived systems/technology skills were taught or used

less often than employers (m=3.58, sd=1.21).

Interpersonal skills: The t-value of 5.31 provided statistical significance (two tail p=.000) at the .05 alpha level and 171 degrees of freedom. The results indicate that teachers (m=3.50, sd=.91 perceived interpersonal skills were taught or used less often than employers (m=4.18, sd=.77)

. There was no significant difference between the perceptions of teachers and employers on the frequency of using informational skills in the classroom and in the workplace. However, as a result of the statistically significant findings in six of the seven skill areas, the null hypothesis of no statistically significant differences is rejected.

Research Question 6:

> Is there a statistically significant difference in perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district?

Research Hypothesis 6:

> There is a statistically significant difference in the perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district.

The mean responses of employers on the survey to the importance of the seven skill areas were used as dependent variables in a Kruskal-Wallis One-Way Analysis of Variance. An employer was determined to have no relationship if there were no yes responses to the seven questions indicating a relationship. An employer was determined to have a limited relationship if there were 1 to 2 yes responses and an employer was determined to have an extensive relationship if there were 3 or more yes responses. The employer relationships with the school district were used as the independent variables. The results of this analysis are reported in Table 31

Table 31

Kruskal-Wallis One-Way Analysis of Variance
Perceptions of the Importance of Skill Areas by Relationship With the School District

Skill Area	Number	Mean	SD	Mean Rank	Chi Square
Basic Skills					
No relationship	15	3.67	.48	45.03	1.43 (NS)
Limited relationship	34	3.72	.28	42.41	
Extensive relationship	43	3.76	.37	49.25	
Thinking Skills					
No relationship	15	3.63	.43	45.37	5.28 (NS)
Limited relationship	34	3.51	.42	38.26	
Extensive relationship	41	3.70	.46	51.55	
Personal Qualities					
No relationship	15	3.67	.41	38.83	4.38 (NS)
Limited relationship	34	3.74	.31	42.28	
Extensive relationship	42	3.77	.55	51.57	
Resource Skills					
No relationship	15	3.08	.77	45.00	2.23 NS)
Limited relationship	33	3.74	.67	40.58	
Extensive relationship	42	3.77	.70	49.55	
Systems/Tech Skills					
No relationship	15	3.30	.88	47.70	.14 (NS)
Limited relationship	33	3.15	1.00	45.15	
Extensive relationship	42	3.21	.84	44.99	
Information Skills					
No relationship	15	3.31	.64	45.33	1.43 (NS)
Limited relationship	34	3.16	.84	42.21	
Extensive relationship	42	3.37	.74	49.31	
Interpersonal Skills					
No relationship	15	3.52	.59	42.53	.69 (NS)
Limited relationship	34	3.53	.51	44.12	
Extensive relationship	42	3.59	.58	48.40	

The statistical procedure presented in Table 31 determined if relationships with the school district made a difference in perceptions of employers on the importance of skills needed for the workplace. The chi-square value on all skill areas indicated that perceptions of the importance of these skills did not differ significantly among employers based on their relationship with the school district. As a result of the nonsignificant findings, the null hypothesis of no significant differences cannot be rejected.

Summary

This chapter has presented results of the data analysis for the research project. It has described the personal, professional and business characteristics of teachers and employers who participated in the study and described their responses to the seven skill areas. This chapter has also tested the research hypotheses and answered the six research questions. Results and recommendations from this chapter are summarized in Chapter V.

CHAPTER V

CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

Introduction

Criticism of public education in the United States has been mounting during the past decade. Business and labor are questioning the ability of public education to prepare young people to perform in a global economy, to help U.S. industries regain a competitive edge with other industrialized nations, and to adapt to new and changing technologies. Many young people struggle in the labor market due to lack of a comprehensive system that prepares them to make the transition from school to the workplace.

For the majority of American students, what they learn in school is not clearly relevant to what they need to succeed after leaving high school. The typical high school program is designed for students planning to attend a four-year college or university. However, over 30% of high school students drop out prior to graduation (Parnell, 1988). Therefore, the high school program is found useful for only one out of every five students (U.S. Department of Labor, as cited in Texas Higher Education Coordinating Board, 1995). Neither college-bound nor non-college-bound high school graduates are able to find decent wage jobs at the time when they are expected to begin assuming adult responsibilities or to support themselves in some way (Texas Higher Education Coordinating Board, 1995).

"A Nation At Risk" brought attention to public education in America and the need to make graduates more employable in the global economy. Studies followed to determine what tomorrow's employees will need to put their knowledge to work and what schools and employers must do to ensure that today's students graduate with the requisite

competencies and skills (Packer, 1992).

One such study was conducted by the Secretary's Commission on Achieving Necessary Skills (SCANS), a joint effort by the Departments of Education and Labor. SCANS conducted a year-long study that defined the skills and competencies needed for effective job performance that were identified by employers throughout the country. These competencies and skills are needed by all students--those going directly to work as well as those planning further education. The skills defined by SCANS included basic skills, thinking skills and personal qualities such as responsibility, integrity and honesty. Five distinct competencies included using resources, working with others, acquiring information, understanding systems and using technology.

The SCANS Commission recommended that public education will have to invest in change (1992). It stated that to create a match between what work requires and what students learn will require changing how and where students are taught. SCANS called for a redesign of American education beginning with curriculum and instructional reform; but noted that to do so requires a commitment to change and a willingness to take action by both the school and the community, as well as participation from all stakeholders in education.

New education goals can create conditions for change if they have been developed in collaboration with the business community. With a consensus about what the goals of school reform should be, a framework can be established for making informed decisions about strategies and priorities (Wagner, 1993).

This study had several purposes: (a) to determine the perceptions of teachers and employers in a metropolitan community about the competencies and skills needed by high

school graduates to be effective in the workplace of the future; (b) to determine points of agreement between these two stakeholders; and (c) to use the data to develop a framework to generate new philosophies of curriculum and instructional strategies at Walled Lake Central High School.

The SCANS survey was used to compare perceptions of high school teachers with employers in the community to determine congruency between the two stakeholders of what students should know to prepare them for expectations of the workplace. This study explored the relevance of evidence from professional development experiences in which some teachers have participated, namely job shadowing and in-service to develop integrated curriculum that undergird school improvement efforts, as well as the relationship of the school and the business community. It also described the personal, professional and business characteristics of teachers and employers who participated in the study, and summarized their responses to the seven skill areas. This study also tested the research hypotheses and answered the six research questions.

Summary of the Study

The introduction and review of literature traced the historical developments of vocational education and school improvement and confirmed that attempts to reform education have come from different visions about what makes good education. These visions have been drawn from an array of educational models of organizing curriculum, instruction and use of technology. As we near the end of the third wave of educational reform, which stems from the need to make graduates employable, critics of the public schools continue to call for drastic changes in curriculum, teaching, organization and functioning, climate, learning sites and in the relationships between the workplace and the

schools (Daggatt, 1995; Passow, 1986).

A descriptive research design, which described the attitudes or perceptions of the participants, was appropriate in forming the framework for this study.

A survey measuring the competencies and skills defined by the Secretary's Commission on Achieving Necessary Skills (SCANS) was completed by high school teachers and employers in one metropolitan community to determine perceptions about what students should know to obtain and maintain jobs in today's society. A comparison of their responses provided data which contrasts perceptions of their importance and frequency of use in the classroom and in the workplace.

Six research questions were developed that related to the purpose of the study. A hypothesis was formulated for each question to determine the validity of the conclusions.

Summary of Research Analyses and Procedures

The findings of the study were based on data processed by the Statistical Package for the Social Sciences (SPSS) Release 4.1 for IBM O/S MVS. The two samples were analyzed using descriptive statistical procedures and each hypothesis was tested using inferential statistical procedures that included Kruskal-Wallis One-Way Analysis of Variance, Mann-Whitney U Test for Independent Samples, and t-Test for Independent Samples. Data from 80 teachers and 94 employers was used in the statistical analysis.

Employers and teachers who participated in the study were asked to complete a brief demographic survey which described their personal, professional and business characteristics. Forty-four female and 36 male teachers from one high school participated in the study. Fifty male and 40 female employers from the school community were also participants in the study. Four employer participants did not report their gender. All

certified and classroom paraprofessional staff from the high school were invited to participate, as well employers located in the school community who represented businesses of varying sizes and differing industries.

The largest group of teachers reporting their years of secondary teaching experience were those having 20 years or more. The second largest group reported experience of 1 to 5 years. Teacher participants represented all disciplines offered at the school as well as counselors, administrators and classroom paraprofessional staff.

Teachers were asked to respond to their participation in two staff development experiences: job shadowing and in-service to develop integrated curriculum. The majority of teachers reported they had not participated in either of the two staff development experiences. The highest educational level reported by the majority of classroom teachers was a master's degree or higher.

The majority of employer participants reported their highest level of education as having college courses to a professional degree beyond a master's degree. Most reported being in business from 13 years to 20 years or more. While most employers reported having fewer than 25 employees, over 20% reported having 100 to more than 500 employees. The largest group of employers responding to the survey was in finance/insurance/real estate. However, employers from construction, health services, manufacturing, retail-wholesale trade, other services, agriculture/forestry/fishing and transportation/public utility also participated.

Employers were asked to respond to questions which indicated their relationship with the school district. The majority of employers reported that they hired full-time graduates, part-time student employees and students from co-op and work experience

programs, however, approximately 20 percent of the employer participants did not respond to these questions.

Other questions regarding employer relationships with the school district included providing job shadowing or internship experiences for staff, participation on school committees, visits to high schools, or children/self attending schools in the district. The majority of employers reported a "no" response to each of these questions. Approximately 20% of employers did not respond.

Findings, Conclusions, and Implications

> *Research Question 1.* Do teachers of identified disciplines have different perceptions of the importance of skills needed for the workplace?
>
> $H_{(R)1}$ stated that there would be a statistically significant difference among teachers of identified disciplines of the importance of skills needed for the workplace.

Findings: Statistical analysis of the data revealed no significant difference of the obtained chi-square value at an alpha level of .05. Systems and technology was the only workplace skill to show significant results among teachers from the five recoded disciplines. Teachers in the "Question Not Applicable" group had the most positive perception on the importance of systems and technology skills. This group included counselors, administrators and a classroom paraprofessional. Although the remaining six skill areas did not provide evidence of significant differences among teachers from identified disciplines, teachers in business/vocational and technical education indicated a more positive perception in 5 of the 7 skill areas, and special services teachers perceived basic skills more positively than did other teachers.

Conclusions: Counselors and administrators understand the importance of systems and use of technology in teaching to a greater degree than classroom teachers.

Special education teachers may be teaching basic skills more often than the other skill areas. Business and vocational/technical teachers may be teaching more of the workplace skills in their subject content than teachers in the academic disciplines. However, the nonsignificant findings among teachers based on their primary discipline indicates agreement by all teachers that workplace skills are important in the classroom.

Implications: Teachers are supported by administrators in implementing use of technology in teaching. Business and vocational/technical education teachers have knowledge of the workplace which makes them more positive in their perceptions of skills that are needed. This knowledge may be used in teaming with academic teachers to provide vocational skills in academic content as described in the models by Grubb (see Appendix A). The results of this analysis also indicate the importance of skills being taught across the curriculum. Ten interdisciplinary models of integration by Fogarty are also found in Appendix A. Special education teachers may need in-service to broaden their perceptions and develop strategies of teaching skills other than basic skills to special education students so that they are equally prepared for the workplace.

> *Research question 2.* Is there a difference in employer and teacher perceptions of the importance of skills needed for the workplace?
>
> $H_{(R)2}$ stated that there would be a statistically significant difference between the perceptions of employers and teachers of the importance of skills needed for the workplace.

Findings: Statistical analysis of the data revealed no significant difference in perceptions of the importance of workplace skills by teachers and employers. However, statistical significance was found in two of the seven skill areas. Teachers perceived information skills and resource skills more important than employers.

Teachers and employers were in agreement on the importance of basic skills,

thinking skills, personal qualities, systems and technology skills, and interpersonal skills.

Conclusions: The difference in positive perceptions of information and resource skills by teachers and employers may be due to the role of teachers in the assessment of knowledge based on concepts whereas knowledge in the workplace is based on application (From School-to-Work, 1992).

Perceptions may also differ due to the learning tasks presented in the classroom versus the job tasks expected in the workplace. The nonsignificant findings on the perceptions of teachers and employers indicates overall agreement on the importance of the seven skill areas.

Implications: Studies by American competitors have shown that human resources are more important to employers than physical resources (Wirth, 1992). Also, information skills are less important to employers than other skills that include communications, basic skills, teamwork and interpersonal skills where studies show more emphasis is needed in education ("Hiring Trends," 1997).

> *Research question 3*. Do teachers who completed staff development experiences have different perceptions of the importance of skills needed for the workplace than those who did not complete these experiences?
>
> $H_{(R)3}$ stated that there would be a statistically significant difference in the perceptions of teachers who completed staff development experiences and those who did not complete these experiences of the importance of skills needed for the workplace.

Findings: Statistical analysis of the data revealed no significant difference of the t-value, and no significant difference of the z-value at an alpha level of .05. Teachers were asked if they had participated in two staff development experiences. A t-test for independent samples was used to compare perceptions of each skill area by teachers who completed integrated curriculum in-service; because of the size of the respondent groups,

a Mann-Whitney U test was used to compare perceptions of teachers who completed job shadowing. Although perceptions of the importance of workplace skills were not statistically significant between teachers who completed integrated curriculum and those who did not, more positive perceptions were held by completers of the in-service in the areas of basic skills, thinking skills, personal qualities, and interpersonal skills. A comparison of perceptions of the importance of workplace skills by teachers who completed a job shadowing experience and those who did not showed no statistical significance. However, more positive perceptions were held by completers of job shadowing in the areas of thinking skills, personal qualities, resource skills, information skills, and interpersonal skills.

Conclusions: Perceptions of the seven skill areas by teachers who participated in the two staff development experiences--job shadowing and in-service to develop integrated curriculum showed lack of statistical significance. However, overall more positive perceptions were held by completers of the staff development experiences than those that did not. According to the literature review, teacher participation in staff development activities makes it more likely that their learning will be reflected in the curriculum. However, this finding is not supported by data in this study.

Implications: Most current reform efforts in the learning of teachers is through staff development. Job shadowing and integration in-service does make a difference in developing a knowledge of skills needed for the workplace. Teachers are increasingly required to prepare students with an understanding of education for employment. Unfortunately, most teachers don't know much about the world of work outside the classroom. Staff development through internships and job shadowing helps teachers to see the relevancy of school to the future of students in the working world. Teachers are then

expected to develop lessons that will integrate their work-based knowledge into academic content. The results in the classroom improve the lives of students because the curriculum is tied to what happens in the "real" world. Employers are delighted because graduates come to jobs with the skills and attitudes needed to become successful and productive employees that make employers competitive in a global economy (Dolainski, 1997). Due to the insignificant findings of this study, further research is recommended to explore the content, process and structure of the two staff development experiences.

> *Research question 4.* Do employers of identified occupations have different perceptions of the skills needed for the workplace?
>
> $H_{(R)4}$ stated there would be a statistically significant difference in the perceptions of employers of identified occupations of the importance of skills needed for the workplace.

Findings: Statistical analysis of the data revealed no significant difference of the obtained chi-square value at an alpha level of .05. A significant difference was found among the different occupational groups in the basic skills area, with employers in finance/insurance/real estate having the most positive perceptions of the importance of this skill area. The remaining six skill areas did not provide evidence of significant differences among employers from different industries or occupations.

Conclusions: The one significant finding in this analysis indicates that basic skills are more important to employees in finance, insurance and real estate than to the other employer groups. These industries will expect an educational system that views these skills equally important. The importance of the seven skill areas were validated by all employer groups. Lack of significance between occupations or industries indicates agreement on the importance of each skill.

Implications: The results of this analysis indicates the importance of workplace

skills in all career/occupational areas. Counselors, teachers and others may use the one significant finding to counsel and advise students in career awareness, planning and decision making. Students pursuing interests in finance, insurance and real estate should develop knowledge and application of the basic skills during their high school education. This expectation should also be made known to teachers through staff development as they develop curriculum and instructional strategies in these career areas.

> *Research question 5*. Is there a difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace?

> $H_{(R)5}$ stated there would be a statistically significant difference in employer and teacher perceptions of how frequently competencies and skills are taught in the classroom and expected in the workplace.

Findings: Statistical analysis of data revealed a significant difference of the t-value at an alpha level of .05. Perceptions of how frequently workplace skills are used or taught were significantly different between teachers and employers. Employers perceived basic skills, thinking skills, personal qualities, resource skills, systems and technology skills, and interpersonal skills more frequently used than did teachers. Perceptions did not differ between teachers and employers on frequency of using information skills.

Conclusions: Employers were more positive than teachers about use of the seven skill areas. Competencies and skills that are considered essential to job performance are seldom taught in school. This difference in perceptions may have resulted from teachers' lack of awareness of how what they teach applies to the workplace as well as to the way in which teachers are trained (Carnevale, 1988; LaBaree, 1994). Also contributing to the significant findings may be the perception by the educational community that most

students are college-bound, will graduate from college and will get good jobs ("The Main Event," 1997).

Implications: Students are receiving little instruction or use of the seven workplace skills in the classroom, which has implications that include assessment and student performance as previously discussed. Current reform initiatives and expectations of teachers to prepare students for the workplace present challenges to the process by which teachers are trained. Most of the teachers in this study have 20 years of teaching experience or more and many have advanced degrees which implies less probability of future academic study. Teachers are challenged to develop new skills in order to teach in the context of the world of work so that content is more relevant. They must develop collaborative learning environments, learn new pedagogical skills and strive to get practical experience with the principles of the high performance workplace. To develop a teaching force that is diverse, well-prepared, and culturally responsive to the needs of education for the 21st century will require a commitment to and investment in on-going professional development by the school district. Parents must also be included in professional development activities so that their expectations for education are consistent with research to make informed decisions about curriculum and other instructional issues in collaboration with teachers and other stakeholders.

Teacher education must include knowledge of the workplace so that it is reflected in curriculum and strategies used in teaching.

> *Research question 6.* Is there a difference in the perceptions of employers on the importance of skills needed for the workplace based on their relationships with the school district?
>
> $H_{(R)6}$ stated there would be a statistically significant difference in the perceptions of employers on the importance of skills needed for the workplace based on their relationship with the school district.

Findings. Statistical analysis of the data revealed no significant difference of the obtained chi-square value at an alpha level of .05. Employers were asked seven questions to determine their relationship with the school district. Employers' responses were recoded into three categories: no relationship, limited relationship and extensive relationship. Employers' perceptions of the importance of the seven skill areas were compared based on their relationship with the school district. Although no statistically significant differences were found, employers with an extensive relationship perceived basic skills, thinking skills, personal qualities, resource skills, information skills, and interpersonal skills more positively than other employers.

Conclusions: Though differences were not significant, employers having a relationship with the school district were more positive in most of the skill areas than those who had no relationship. To ensure a competent future workforce and that the nation's young people learn what they need while in school to successfully make the transition from school to the workplace, and are able to be lifelong learners, business must partner with schools to reform the process of education (Dolainski, 1997).

Implications: Relationships with the school district did not show statistical significance in the importance of the seven skill areas to employers. However, the significance of each relationship may yet be explored to determine the validity of the conclusions. Relationships can be informal or structured as in education-business partnerships. Employers not only receive the support of classroom instruction and career counseling, they share their experience through advisement on standards, support of work-based and school-based learning, and expanded access to quality vocational education through co-op, work experience and apprenticeship programs. Relationships

between schools and the business community are crucial to the success of school-to-work programs. Schools must develop strategies that attract and encourage relationships with employers.

Discussion and Recommendations Based on Findings

Employers in the 21st century will expect the educational system to ensure that all of its graduates have the skills to lead successful and rewarding lives. This will require a commitment to educational change and a willingness to take action. New educational goals will create conditions for change if they have been developed in collaboration with the business community. The two must come together to strengthen a weak American economy that is struggling to meet the competition from overseas (Packer, 1992).

According to Wagner (1993), with a consensus between schools and communities about what the goals of school reform should be, a framework can be established for making informed decisions about strategies and priorities. The employer community plays a key role in making known to educators their expectations to be effective in the workplace of the future. Educators will be better prepared to meet the needs of students and to develop a skilled, technical workforce that is competitive in a global economy.

Focus of the SCANS (1991) study was to determine the role of schools in making sure that young people are ready for the world of work as one important part of their education. Skills identified by SCANS – basic skills, thinking skills, informational skills, resource skills, systems and technology skills, personal qualities and interpersonal skills – are essential to the success of all students, those going directly into the workforce, as well as those who are college-bound.

Findings of this study indicate consensus between high school educators and

employers on the importance of the SCANS skills. Yet, there is a significant disagreement regarding the frequency of teaching or using these skills. This disparity, along with points of agreement, leads this researcher to pose the following recommendations for developing new philosophies of curriculum and instructional strategies for school improvement.

Recommendations to educators

1. Initiate a "town meeting," task force or establish focus groups with employers, educational, and community leaders to share the research findings. Decide priorities and a plan of action.

2. Identify a person to assume responsibility for networking and developing a collaborative plan.

3. Provide incentives for teachers, paraprofessionals, counselors and administrators to complete internships and job shadowing experiences. If possible, make participation mandatory.

4. Provide on-going staff development programs to assist teachers in developing strategies that integrate work-based knowledge in the classroom. Include opportunities for follow-up, feedback and sharing. Include parents and employers in staff development activities.

5. Implement a strong program to develop curricular integration skills in all subjects – core curricular and extra-curricular.

6. According to literature reviewed in this study, a single curriculum should be provided for all students that is both rigorous and relevant through application of the present academic curriculum. Ability grouping should be eliminated and. instructional strategies should be learned to accommodate students' different interests, aptitudes, and learning styles.

7. Form a strong link with the business community:

   a. Organize a business advisory group to advise on curriculum content and industry skill standards.

   b. Provide incentives to encourage employer participation in job shadowing, mentoring and other activities that connect school and work-based learning.

8. Develop the work-based knowledge of new teachers through partnerships with universities and the business community that give credit toward certification for industry experience acquired during the summer months and/or weekends.

9. Provide opportunities through staff development to redesign the curriculum so that it is more effective. Develop prototypes of successful approaches and allow teachers to be creative.

10. Develop strategies to teach skills in the context of real-life situations and real problems. Provide simulations when real environments are not available.

11. Include assessment techniques that are consistent with the SCANS philosophy–namely, performance standards and certificates of mastery.

12. Invest heavily in instructional technology and staff development to become a high performance organization.

Recommendations to employers

1. Volunteer to serve on academic advisory committees to upgrade the content of teacher education programs so that knowledge of the workplace is included..

2. Form a strong link with the educational community:

   a. Provide teacher orientation sessions of workplace needs and expectations. Offer internships and job shadowing experiences for educators, students, and parents.

   b. Support classroom instruction by providing volunteer personnel as speakers and mentors. Volunteer equipment and other material resources.

   c. Use academic transcripts in the hiring process so that students see the relationship between school and future employment.

   d. Develop a certificate of mastery in collaboration with the school district to be used in the hiring process.

3. Adopt the high performance standards that characterize today's leading-edge companies and share this information in some way with the educational community.

Recommendations for Further Research

The following recommendations are made as a result of the findings of this study to understand the importance and use of the SCANS competencies and skills in school-to-work transition:

1. This researcher is recommending that the methodology and design used in the study is replicated to validate the research findings. This methodology and design can be applied to any public school and business community with similar demographics as those in the populations of this study.

2. Perceptions of students should be compared with teachers' to determine points of agreement on the importance and frequency of using workplace skills in the classroom.

3. Attitudes of parents should be studied to determine their perceptions of the importance and frequency of using workplace skills in the classroom.

4. Perceptions of teachers in the two remaining high schools in the district should be studied to determine if they are as positive as teachers in the present study.

5. Perceptions of teachers in the feeder elementary and middle schools should be studied to determine if they are as positive as teachers in present study.

6. Perceptions of teachers in the technical center within the district should be studied to determine if they are more positive on the frequency of teaching or using workplace skills than high school teachers in the present study.

7. More research is needed to determine the effect of staff development experiences on perceptions of teachers on school-to-work transition.

8. More research is needed to determine the effect of relationships with the school district on the perceptions of employers on school-to-work transition.

APPENDIX A

Integration of Academic and Vocational Education (Grubb)

SCANS Competencies Integrated in Core Academic Subjects

Interdisciplinary Models of Integration (Fogarty)

Models of Integrating Vocational and Academic Education

	Curriculum Changes	*Teacher Changes*	*Students Targeted*	*Institutional Changes*
1. Incorporating more academic content in vocational courses	Vocational courses include more academic content	Vocational teachers modify courses	Vocational students	None
2. Combining vocational and academic teachers to enhance academic content in vocational programs	Vocational programs include more academic content, in either vocational courses or related applied courses	Academic teachers cooperate with vocational teachers	Vocational students	None
3. Making academic courses more vocationally relevant.	Academic courses include more vocational content; sometimes new courses (e.g., applied academics) adopted	Academic teachers (usually) modify courses or adopt new ones	Potentially all students; in practice, vocational and general-track students	None
4. Curricular alignment: horizontal and vertical.	Both vocational and academic courses modifies and coordinated across and/or over time	Vocational and academic teachers cooperate; numbers range from two to all	Potentially all students; actual targets vary	None necessary; curriculum teams may foster cooperation
5. Senior projects	Seniors replace electives with a project; earlier courses may change in preparation	None necessary; teachers may develop new courses or modify content to better prepare students	All students	None necessary
6. The Academy Model	Alignment among academy courses (English, math, science, vocational) *may* take place	Vocational and academic teachers may collaborate on both curriculum and students	Usually potential dropouts; sometimes students interested in specific occupational areas	School-within-a-school; block rostering; smaller classes; links to employee
7. Occupational high schools and magnet schools	Alignment among all courses may take place, emphasizing the occupational focus	All vocational and academic teachers assigned to an occupational school or magnet within a school; collaboration facilitated	Students interested in specific occupational areas	Creation of a self-contained occupational school or magnet school
8. Occupational clusters, "career paths," and majors	Coherent sequences of courses created; alignment may take place among courses within clusters	Teachers belong to occupational clusters rather than (or in addition to) conventional departments; collaboration facilitated	All students	Creation of occupational clusters; enhancement of career counseling; possible cluster activities

Grubb (1992)

Assignments that Integrate the SCANS Competencies into the Core Curriculum

	Curriculum Area				
Competency	English/Writing	Mathematics	Science	Social Studies/Geography	History
Resources	Write a proposal for an after-school career lecture series that schedules speakers, coordinates audio-visual aids, and estimates costs.	Develop a monthly family budget, taking into account expenses and revenues, and – using information from the budget plan– schedule a vacation trip that stays within the resources available.	Plan the material and time requirements for a chemistry experiment, to be performed over a two-day period, that demonstrates a natural growth process in terms of resource needs.	Design a chart of resource needs for a community of African Zulus. Analyze the reasons why three major cities grew to their current size.	Study the Vietnam War, researching and making an oral presentation on the timing and logistics of transport of materials and troops to Vietnam and on the impact of the war on the Federal Budget.
Interpersonal Skills	Discuss the pros and cons of the argument that Shakespeare's *Merchant of Venice* is a racist play and should be banned from the school curriculum.	Present the results of a survey to the class, and justify the use of specific statistics to analyze and represent the data.	Work in a group to design an experiment to analyze the lead content in the school's water. Teach the results to an elementary school class.	In front of a peer panel, debate whether to withdraw U. S. military support from Japan. Simulate urban planning exercise for Paris.	Study America's Constitution and roleplay negotiation of the wording of the free States/slave States clause by different signers.
Information	Identify and abstract passages from a novel to support an assertion about the values of a key character.	Design and carry out a survey, analyzing data in a spreadsheet program using algebraic formulas. Develop tables and graphic displays to communicate results.	In an entrepreneurship project, present statistical data on a high-tech company's production/sales. Use a computer to develop statistical charts.	Using numerical data and charts, develop and present conclusions about the effects of economic conditions on the quality of life in several countries.	Research and present papers on effect of Industrial Revolution on class structure in Britain, citing data sources use in drawing conclusions.

	Curriculum Area				
Competency	English/Writing	Mathematics	Science	Social Studies/Geography	History
Systems	Develop a computer model that analyzes the motivation of Shakespeare's *Hamlet*. Plot the events that increase or decrease Hamlet's motivation to avenge the death of his father by killing Claudius.	Develop a system to monitor and correct the heating/cooling process in a computer laboratory, using principles of statistical process control.	Build a model of human population growth that includes the impact of the amount of food available on birth and death rates, etc. Do the same for a growth model for insects.	Analyze the accumulation of capital in industrialized nations in systems terms (as a reinforcing process with stocks and flows).	Develop a model of the social forces that led to the American Revolution. Then explore the fit between that model and other revolution.
Technology	Write an article showing the relationship between technology and the environment. Use word processing to write and edit papers after receiving teacher feedback.	Read manuals for several data-processing programs and write a memo recommending the best programs to handle a series of mathematical situations.	Calibrate a scale to weigh accurate portions of chemicals for an experiment. Trace the development of this technology from earliest uses to today.	Research and report on the development and functions of the seismograph and its role in earthquake prediction and detection.	Analyze the effects of wars on technological development. Use computer graphics to plot the relationship of the country's economic growth to periods of peace and war.

The Mindful School, How to Integrate the Curricula

- Fragmented – The traditional model of separate and distinct disciplines, which fragments the subject areas.
- Connected – Within each subject area, course content is connected topic to topic, concept to concept, one year's work to the next, and relates idea(s) explicitly.
- Nested – Within each subject area, the teacher targets multiple skills: a social skill, a thinking skill, and a content-specific skill.
- Sequenced – Topics or units of study are rearranged and sequenced to coincide with one another. Similar ideas are taught in concert while remaining separate subjects.
- Shared – Shared planning and teaching take place in two disciplines in which overlapping concepts or ideas emerge as organizing elements.
- Webbed – A fertile theme is webbed to curriculum contents and disciplines; subjects use the theme to sift out appropriate concepts, topics, and ideas.
- Threaded – The metacurricular approach threads thinking skills, social skills, multiple intelligences, technology, and study skills through the various disciplines.
- Integrated – This interdisciplinary approach matches subjects for overlaps in topics and concepts with some team teaching in an authentic integrated model. (Fogarty, 1991, p. 12)

APPENDIX B

Employer Survey Instrument and Demographic Questionnaire

Teacher Survey and Demographic Questionnaire

Employer Survey

ATTITUDES TOWARD WORKPLACE SKILLS

Please take a few minutes to read the skills definitions that are considered essential for employees. First, rate each skill according to your perception of its importance to your occupation or place of business. Then, going from left to right, rate the same skill according to your perception of how frequently it is used. Use the scales on both sides below to rate each skill. Shade in your responses using the attached answer sheet. Follow numbers consecutively.

A. No importance B. Little importance C. Some importance D. Very important	A. Never B. Seldom C. Sometimes D. Often E. Very often

Importance A B C D	Please rate each of the following skills using the above scales:	Frequency A B C D E
	Basic Skills	
1.	Reading – Locates, understands, and interprets written information in prose and documents (including manuals, graphs, and schedules) to perform tasks: learns from text by determining the main idea or essential message.	2.
3.	Writing – Communicates thoughts, ideas, information, and messages in writing: composes and creates documents such as letters, directions, manuals, reports, proposals, graphs, flow charts with language, style, organization, and format appropriate to the subject matter, purpose, and audience.	4.
5.	Arithmetic – Performs basic computations: uses basic numerical concepts such as whole numbers and percentages in practical situations: uses tables, graphs, diagrams, and charts to obtain or convey quantitative information.	6.
7.	Speaking – Organizes ideas and communicates oral Messages appropriate to listeners and situations: Participates in conversation, discussion, and group Presentations: speaks clearly.	8.
9.	Listening – Listens carefully: understands and responds to listener feedback. Receives, interprets, and responds to verbal messages and other cues such as body language.	10.
	Thinking Skills	
11.	Creative thinking – Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas, and reshapes goals in ways that reveal new possibilities.	12.
13.	Decision Making – Specifies goals and constraints, creates alternatives, considers risks, and evaluates and chooses best alternative.	14.

Importance A B C D	Please rate each of the following skills using the previous scales:	Frequency A B C D E
15.	Problem Solving – Recognizes that a problem exists (sees The difference between what is and what could or should be): identifies possible reasons for the differences and creates and implements a plan of action to resolve them. Evaluates and monitors progress and revises plan as Indicated by findings.	16.
17.	Knowing How to Learn – Can adapt and apply new Knowledge and skills to both familiar and changing situations. Is able to use ways of learning such as note-taking and organizing information. Becomes aware of false assumptions that may lead to wrong conclusions.	18.
	Personal Qualities	
19.	Responsibility – Exerts effort and perseverance towards goal attainment: works to become excellent at doing tasks by setting high standards, paying attention to details, working well even when assigned an unpleasant task, and displaying a high level of concentration.	20.
21.	Social Skill – Demonstrates understanding, friendliness, adaptability, empathy, and politeness in new and ongoing group settings. Asserts self in familiar and unfamiliar social situations: relates well to others: responds appropriately: takes an interest in what others say and do.	22.
23.	Self Management – Assesses own knowledge, skills, and abilities accurately: sets well-defined and realistic personal goals: monitors progress toward goal attainment and motivates self through goal achievement: exhibits self-control and responds to feedback unemotionally and nondefensively: a "self starter."	24.
25.	Integrity/Honesty – Can be trusted: recognizes when faced with making a decision or acting in ways that may break with commonly-held personal or societal values: understands the impact of violating these beliefs and codes in respect to an organization, self, or others: chooses an ethical course of action.	26.
	Resources	
27.	Manages Time – Selects important, goal-related activities, ranks them in order of importance, allocates time to activities, and understands, prepares, and follows schedules.	28.
29.	Manages Money – Uses or prepares budgets, including making cost and revenue forecasts: keeps detailed records to track budget performance and makes appropriate adjustments.	30.
31.	Manages Material and Facility Resources – Acquires, stores, and distributes materials, supplies, parts, equipment, space, or final products in order to make the best use of them.	32.

Importance A B C D	Please rate each of the following skills using the previous scales:	Frequency A B C D E
33.	Manages Human Resources – Assesses peoples' knowledge, skills, abilities, and potential: identifies present and future workload: makes effective matches between individual talents and workload: monitors performance and provides feedback.	34.
	Systems and Technology	
35.	Understands Systems – Knows how social, organizational, and technological systems work and operates effectively within them: makes suggestions to modify existing systems to improve products or services, and develops new or alternative systems: understands importance of systems maintenance and quality control.	36.
37.	Uses Technology – Judges which set of procedures, tools, or machines will produce the desired results: understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems: prevents, identifies, or solves problems in machines, computers, and other technologies.	38.
	Informational Skills	
39.	Acquires and Evaluates Information – Identifies need for data, obtains it from existing sources or creates it, and evaluates its relevance and accuracy.	40.
41.	Organizes and Maintains Information – Organizes, Processes and maintains written or computerized records and other forms of information in a systematic fashion.	42.
43.	Interprets and Communicates Information – Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial, or multimedia methods.	44.
	Interpersonal Skills	
45.	Participates as a Member of a Team – Works cooperatively with others and contributes to group effort with ideas, suggestions, and effort, resolves differences for the benefit of the team and takes personal responsibility for accomplishing goals.	46.
47.	Teaches Others – Helps others learn needed knowledge and skills: identifies training need and supplies job information to help others see its use and relevance to tasks.	48.
49.	Serves Clients/Customers – Works and communicates with clients and customers to satisfy their expectations: actively listens to customers to avoid misunderstandings and identify needs: communicates in a positive manner, especially when handling complaints or conflict.	50.
51.	Exercises Leadership – Communicates thoughts, feelings, and ideas to justify a position encourage, persuade, convince, or otherwise motivate an individual or groups, including responsibly challenging existing procedures, policies, or authority.	52.

Importance A B C D	Please rate each of the following skills using the previous scales:	Frequency A B C D E
53.	Works with Cultural Diversity – Works well with men and women and with a variety of ethnic, social, or educational backgrounds: bases impressions on individual performance, not on stereotypes.	54.

EMPLOYER DEMOGRAPHIC SURVEY

Please respond to the questions below. All responses will be confidential and results will be presented in summarized form.

Please shade in responses using the attached answer sheet:

55. Indicate how long your company has been in business:

A) 1-5 years B) 6-12 years C) 13-19 years D) 20 or more years

56. Indicate your primary occupation/industry (continued in #57 below):

A) Agriculture/Forestry/Fishing
B) Transportation/Public Utility
C) Finance/Insurance/Real Estate
D) Construction
E) Wholesale Trade

57. or (Primary occupation continued):

A) Health Services
B) Manufacturing
C) Retail Trade
D) Services (Other than Health)
E) Other

Indicate your relationship with the Walled Lake Consolidated School District:

58. Hired graduates for full-time positions **A) Yes B) No**

59. Hired students for part-time positions **A) Yes B) No**

60. Hired students for co-op or work experience **A) Yes B) No**

61. Provided job shadowing or internships for teachers **A) Yes B) No**

62. Served on school committees within the last three years

A) Yes B) No

63. Visited a high school within the last three years **A) Yes B) No**

64. You or children attended(ing) a Walled Lake School **A) Yes B) No**

65. Indicate the approximate number of people in your employ (continued in #66):

A) Less than 25
B) Between 100 and 150
C) Less than 50
D) Between 150 and 350
E) Between 50 and 100

66. or (number of people in your employ, continued)

A) Between 350 and 500
B) More than 500

67. Indicate your gender:

A) male
B) female

68. Indicate your highest level of education (continued in #69 below):

A) High School Diploma/G.E.D.
B) Associates Degree
C) Some College
D) Bachelor's Degree

69. or (highest level of education continued)

A) Master's Degree
B) Master's + 30 hours
C) Ed. Specialist
D) Ph.D. or Ed.D.
E) Other professional degree

THANK YOU FOR COMPLETING THIS SURVEY!

Teacher Survey

ATTITUDES TOWARD WORKPLACE SKILLS

Please take a few minutes to read the skills definitions that are considered essential for employees. First, rate each skill according to your perception of its importance to your primary discipline Then, going from left to right, rate the same skill according to your perception of how frequently it is taught or used in your discipline . Use the scales on both sides below to rate each skill. Shade in your responses using the attached answer sheet. Follow numbers consecutively.

A. No importance B. Little importance C. Some importance D. Very important	A. Never B. Seldom C. Sometimes D. Often E. Very often

Importance A B C D	Please rate each of the following skills using the above scales:	Frequency A B C D E
	Basic Skills	
1.	Reading – Locates, understands, and interprets written information in prose and documents (including manuals, graphs, and schedules) to perform tasks: learns from text by determining the main idea or essential message.	2.
3.	Writing – Communicates thoughts, ideas, information, and messages in writing: composes and creates documents such as letters, directions, manuals, reports, proposals, graphs, flow charts with language, style, organization, and format appropriate to the subject matter, purpose, and audience.	4.
5.	Arithmetic – Performs basic computations: uses basic numerical concepts such as whole numbers and percentages in practical situations: uses tables, graphs, diagrams, and charts to obtain or convey quantitative information.	6.
7.	Speaking – Organizes ideas and communicates oral Messages appropriate to listeners and situations: Participates in conversation, discussion, and group Presentations: speaks clearly.	8.
9.	Listening – Listens carefully: understands and responds to listener feedback. Receives, interprets, and responds to verbal messages and other cues such as body language.	10.
	Thinking Skills	
11.	Creative thinking – Uses imagination freely, combines ideas or information in new ways, makes connections between seemingly unrelated ideas, and reshapes goals in ways that reveal new possibilities.	12.
13.	Decision Making – Specifies goals and constraints, creates alternatives, considers risks, and evaluates and chooses best alternative.	14.

Importance A B C D	Please rate each of the following skills using the previous scales:	Frequency A B C D E
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17.	Knowing How to Learn – Can adapt and apply new Knowledge and skills to both familiar and changing situations. Is able to use ways of learning such as note-taking and organizing information. Becomes aware of false assumptions that may lead to wrong conclusions.	18.
	Personal Qualities	
19.	Responsibility – Exerts effort and perseverance towards goal attainment: works to become excellent at doing tasks by setting high standards, paying attention to details, working well even when assigned an unpleasant task, and displaying a high level of concentration.	20.
21.	Social Skill – Demonstrates understanding, friendliness, adaptability, empathy, and politeness in new and ongoing group settings. Asserts self in familiar and unfamiliar social situations: relates well to others: responds appropriately: takes an interest in what others say and do.	22.
23.	Self Management – Assesses own knowledge, skills, and abilities accurately: sets well-defined and realistic personal goals: monitors progress toward goal attainment and motivates self through goal achievement: exhibits self-control and responds to feedback unemotionally and nondefensively: a "self starter."	24.
25.	Integrity/Honesty – Can be trusted: recognizes when faced with making a decision or acting in ways that may break with commonly-held personal or societal values: understands the impact of violating these beliefs and codes in respect to an organization, self, or others: chooses an ethical course of action.	26.
	Resources	
27.	Manages Time – Selects important, goal-related activities, ranks them in order of importance, allocates time to activities, and understands, prepares, and follows schedules.	28.
29.	Manages Money – Uses or prepares budgets, including making cost and revenue forecasts: keeps detailed records to track budget performance and makes appropriate adjustments.	30.
31.	Manages Material and Facility Resources – Acquires, stores, and distributes materials, supplies, parts, equipment, space, or final products in order to make the best use of them.	32.

Importance A B C D	Please rate each of the following skills using the previous scales:	Frequency A B C D E
33.	Manages Human Resources – Assesses peoples' knowledge, skills, abilities, and potential: identifies present and future workload: makes effective matches between individual talents and workload: monitors performance and provides feedback.	34.
	Systems and Technology	
35.	Understands Systems – Knows how social, organizational, and technological systems work and operates effectively within them: makes suggestions to modify existing systems to improve products or services, and develops new or alternative systems: understands importance of systems maintenance and quality control.	36.
37.	Uses Technology – Judges which set of procedures, tools, or machines will produce the desired results: understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems: prevents, identifies, or solves problems in machines, computers, and other technologies.	38.
	Informational Skills	
39.	Acquires and Evaluates Information – Identifies need for data, obtains it from existing sources or creates it, and evaluates its relevance and accuracy.	40.
41.	Organizes and Maintains Information – Organizes, Processes and maintains written or computerized records and other forms of information in a systematic fashion.	42.
43.	Interprets and Communicates Information – Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial, or multimedia methods.	44.
	Interpersonal Skills	
45.	Participates as a Member of a Team – Works cooperatively with others and contributes to group effort with ideas, suggestions, and effort, resolves differences for the benefit of the team and takes personal responsibility for accomplishing goals.	46.
47.	Teaches Others – Helps others learn needed knowledge and skills: identifies training need and supplies job information to help others see its use and relevance to tasks.	48.
49.	Serves Clients/Customers – Works and communicates with clients and customers to satisfy their expectations: actively listens to customers to avoid misunderstandings and identify needs: communicates in a positive manner, especially when handling complaints or conflict.	50.
51.	Exercises Leadership – Communicates thoughts, feelings, and ideas to justify a position encourage, persuade, convince, or otherwise motivate an individual or groups, including responsibly challenging existing procedures, policies, or authority.	52.

Importance A B C D	Please rate each of the following skills using the previous scales:	Frequency A B C D E
53.	Works with Cultural Diversity – Works well with men and women and with a variety of ethnic, social, or educational backgrounds: bases impressions on individual performance, not on stereotypes.	54.

TEACHER DEMOGRAPHIC SURVEY

Please respond to the questions below. All responses will be confidential and results will be presented in summarized form.

Please shade in responses using the attached answer sheet:

Have you completed either of the staff development activities indicated below:

55. Job shadowing **A) yes B) no**

56. Integrating curriculum **A) yes B) no**

57. Indicate the length of time you have worked in a secondary school:

A) 1 to 5 years B) 6-12 years C) 13-19 years D) 20 or more years

58. Indicate the discipline you teach most of the time (continued in #59):

A) Health/Physical Education
B) Fine/Performing Arts
C) Mathematics
D) Science
E) Social Studies

59. Discipline, continued
A) Business/Vocational/Tech Ed.
B) Communications Arts
C) Special Services
D) World Languages
E) Question Not Applicable

60. Indicate your gender: A) male B) female

61. Please identify yourself as indicated below (continued in #62):
A) teacher
B) administrator
C) counselor
D) custodial staff

62. Identify yourself, continued
A) secretary
B) cafeteria staff
C) paraprofessional
D) other staff

63. Indicate your highest level of education (continued in #64):

A) High School Diploma/G.E.D.
B) Associates Degree
C) Some College
D) Master's Degree

64. Highest level of education, continued

A) Bachelor's Degree
B) Ed. Specialist
C) Master's + 30 hours
D) Ph.D. or Ed.D.
E) Other professional degree

THANK YOU FOR COMPLETING THIS SURVEY!

APPENDIX C

Correspondence

DETROIT PUBLIC SCHOOLS

CROCKETT CAREER / TECHNICAL CENTER
CROCKETT TECHNICAL HIGH SCHOOL

571 Mack Avenue
Detroit, Michigan 48201
Telephone (313) 494-1805

February 4, 1998

Jacqueline D. Cassell
2205 Charms Ravine Drive
Wixom, MI 48393

Dear Ms. Cassell:

Thank you for your recent request to use my survey instrument, "Attitudes Toward Teaching Workplace Skills" in your research. I am pleased to grant you permission to use this survey instrument.

I would be very interested in receiving a copy of the findings of your study.

I wish you good luck in the pursuit of your degree!

Sincerely,

JoAnn Neal

JoAnn Neal, Ed.D.

dcd

Walled Lake Consolidated Schools

Educational Services Center
850 Ladd Road, Building D
Walled Lake, MI 48390
Phone: 248-960-8312
FAX: 248-624-3123

Steven A. Gaynor, Ph.D.
Assistant Superintendent of Schools

March 2, 1998

Ms. Jacqueline Cassell, Assistant Principal
Walled Lake Central High School
2978 S. Commerce Road
Walled Lake, MI 48390

Dear Jackie,

I received an updated dissertation research proposal from you today, and am approving the research you suggest. I understand you will be surveying both the staff at Central and surrounding business community. I have reviewed the letters of introduction and surveys and find no objections.

If I may be of help in any way, please let me know.

Sincerely,

Steven A. Gaynor

Steven A. Gaynor, Ph.D.
Assistant Superintendent of Schools

SG/bjs

WALLED LAKE CONSOLIDATED SCHOOLS

Jerry Hartsock, Principal
David Schreiber, Assistant Principal
Jacqueline D. Cassell, Assistant Principal

CENTRAL HIGH SCHOOL
2878 South Commerce Road
WALLED LAKE, MI 48390
TELEPHONE (248) 960-8600
FAX (248) 624-3568

April 2, 1998

Dear Staff Participant:

As you are aware, the school-to-work committee has stated, "students will acquire knowledge and skills needed to make a successful transition from school to work", as a goal for North Central Accreditation (NCA). To establish baseline data needed to measure the achievement of our goal, we are requesting your participation in a study of the "Attitudes of High School Teachers, Students, and Employers Toward Skills Needed for the Workplace". Data collected from the staff and business community will also be used in the doctoral dissertation study of this writer, and has been approved by the district.

The survey instrument represents the 27 competencies and foundation skills identified by the Secretary's Commission on Achieving Necessary Skills (SCANS, 1991) as essential for all students, both those going directly to work, and those planning further education (p. xv). This instrument has been tested for reliability and validity by Cronbach's alpha coefficient, a statistical procedure, and has been used in many research studies. It has also been pre-tested by 10 members of our staff for clarity of content and will take approximately 12 minutes to complete. All information on the survey will remain anonymous, and data analysis will be presented in summarized form.

Please complete this survey and return it as indicated by the school-to-work, staff subcommittee. Your participation is voluntary, and the return of the completed survey is evidence of your willingness to participate. As there is no coding of the survey, it will not be possible to withdraw from the study once it has been received.

Thank you for completing the survey. Your participation and responses are very important to securing baseline data needed to assess the achievement of our NCA goal, as well as to the results of this study. Please feel free to see me if you have questions or concerns regarding this study, or you may contact Dr. Peter Lichtenberg, Behavioral Investigations Committee, Wayne State University, at (313) 577-1628.

Sincerely,

Jacqueline D. Cassell

Jacqueline D. Cassell, Co-Chair
School-to-Work Committee

WALLED LAKE CONSOLIDATED SCHOOLS

Jerry Hartsock, Principal
David Schreiber, Assistant Principal
Jacqueline D. Cassell, Assistant Principal

CENTRAL HIGH SCHOOL
2878 South Commerce Road
WALLED LAKE, MI 48390
TELEPHONE (248) 960-8600
FAX (248) 624-3568

April 2, 1998

Dear Lakes Area Employer:

Twenty-seven competencies and skills were identified by a United States Department of Labor study in 1991 as essential to the workplace, and are described in the attached survey. The staff of Walled Lake Central High School has stated, "Students will acquire competencies and skills needed to make a successful transition from school to work", as one of its goals for school improvement. We are participants in a study of "Attitudes of Employers and High School Teachers Toward Skills Needed for the Workplace". As an educational stakeholder in the Walled Lake Community, your input is important to the achievement of this goal; therefore, you are also being asked to participate in this study.

Please assist by rating the use and importance of each skill to your business or occupation, which will only take about 12 minutes. Your responses will provide data needed in curriculum planning, staff development, and to establish common educational goals for students at Walled Lake Central High School. This survey has been tested for validity and reliability by Cronbach's alpha coefficient, a statistical procedure. All information on the survey will remain anonymous. No individual can or will be identified.

Your participation is voluntary, and the return of the completed survey instrument is evidence of your willingness to participate. I am asking that you complete the survey and brief demographic questionnaire, which gives basic information about you and your business, within five working days. Please use the enclosed self-addressed, stamped envelope and return it to this researcher by United States mail. Once the survey has been received, it will not be possible to withdraw from the study as there will be no means of identifying your response.

As I am a student at Wayne State University, data collected from this study will also be used in a doctoral dissertation. If you have any questions or would like additional information, please feel free to contact me at (248) 960-8608, office; or (248) 624-8370, home.

Thank you for completing the survey. Your participation and responses are very important to the results of this study.

Sincerely,

Jacqueline D. Cassell

Jacqueline D. Cassell

APPENDIX D

Michigan Plan for Implementing Core Academic Curriculum

Plan for Implementing Core Academic Curriculum Requirements From P.A. 335 of 1993

MICHIGAN DEPARTMENT
OF EDUCATION

COMMONLY ASKED QUESTIONS AND ANSWERS ABOUT THE CORE CURRICULUM

MICHIGAN DEPARTMENT OF EDUCATION

JANUARY 1994

How does the core academic curriculum differ from the Model Core Curriculum Outcomes?

The Model Core Curriculum Outcomes, originally published in 1990, specified nine areas of the core curriculum: language arts, mathematics and science, world studies, physical education and health, arts education, technology, aesthetic and cultural awareness. The new legislation—P.A. 335 of 193—lists mathematics, science, reading, writing, history, geography, economics, and American Government as the core academic curriculum. this curriculum cannot include attitudes, beliefs, or value systems that are not essential in the legal, economic, and social structure of our society and to the personal and social responsibility of citizens of our society.

The existing Model Core Curriculum Outcomes document will be revised as needed in the content areas specified in the core academic curriculum. The content areas not included in the new core academic curriculum will continue to be supported by the State Board of Education as an important supplement to the core academic curriculum.

What is the status of the state's Model Core Curriculum Outcomes?

The State Board of Education continues to support the recommended Model Core Curriculum Outcomes. The plan to keep it updated and provide materials to districts who wish to use it to expand and supplement the core academic curriculum.

Is the core academic curriculum "recommended", "required", or "mandated"?

The core academic curriculum is required beginning with the 1997-98 school year. In 1997, each district must provide the State Board core academic curriculum: math, science, reading, writing, history, geography and American government to all students in their districts. Prior to 1997, the district core curriculum may vary from the core academic curriculum recommended by the State Board.

What does "all students" mean in the context of P.A. 335.

The intent of P.A. 335 is to develop school programs, which provide high quality instruction to "all students". The legislation does, however, make provisions for students who may not realistically be able to achieve at the same level or learn in the same way as most students. For special education students an outcome-based core academic curriculum may be developed. At-risk students are expected to achieve the same high standards as are set for "all students". The district is required to provide special assistance to students who are at risk of falling seriously behind others in learning or are in danger of being expelled or of not advancing in grade level with others of the same age/grade level. Districts are to avoid removing students from the core academic curriculum or other regular classroom courses in order to provide the programs.

How does the timeline for implementation of the core academic curriculum correspond to the timeline established for P.A. 25?	The timeline expectations remain unchanged. The intent of P.A. 25 was to have all areas of the core curriculum fully implemented by the 1997-98. With the passage of P.A. 335, the 1997 school year is the time that implementation of the core academic curriculum is required. Since there will be fewer areas for the local districts to develop, it should be more possible to arrive at full implementation.
What happens to the work we have already completed on our district core curriculum?	Since the direction being taken is consistent with state curriculum reform efforts of the past few years, local district curriculum work, from this period, will be on target. The local board may continue to supplement its core academic curriculum by providing instruction through additional classes and programs. Beginning in 1997, a district will be responsible for delivering the State Board of Education's core academic curriculum developed through the promulgation process. In content areas specified in the legislation, the State Board of Education's core academic curriculum must be adopted. You may wish to use the Model Core Curriculum Outcomes as your expanded curriculum. Continue the process of working with your community to identify what it is that you want students to know and be able to do as a result of their education in your district.
When will the core academic curriculum be ready for distribution?	A draft of the core academic curriculum will be ready by September 1, 1994, with the final version distributed after the promulgation process.
Why are history, geography, economics, and American government listed separately instead of included as social studies?	The intent of the legislation was to define a core curriculum for K-12 social studies.
What happens to the speaking, listening and literature components of communication arts?	The U.S. Department of Education funded the Michigan Department of Education to develop an English Language Arts curriculum framework which includes speaking, listening, and literature, as well as reading and writing--all integral to communication arts. The work of this project reflects current literacy research, the National Standards Project for English Language Arts, and the practice of exemplary classroom teachers. The Department intends to develop an integrated curriculum.
Will the Department of Education continue to provide technical assistance and resource materials for the Model Core Curriculum Outcomes?	Since local school districts are allowed to supplement the core academic curriculum, the SBE would support the use of its Model Core Curriculum Outcomes as an expanded curriculum.
How will the P.A.25 electronic reporting be affected by the new legislation?	No major changes are anticipated for the 1993-94 school year.

MODEL CORE REVISION

Focus: Student Knowledge and Skills

Vision of Discipline

Coherent view of discipline

Value to learner

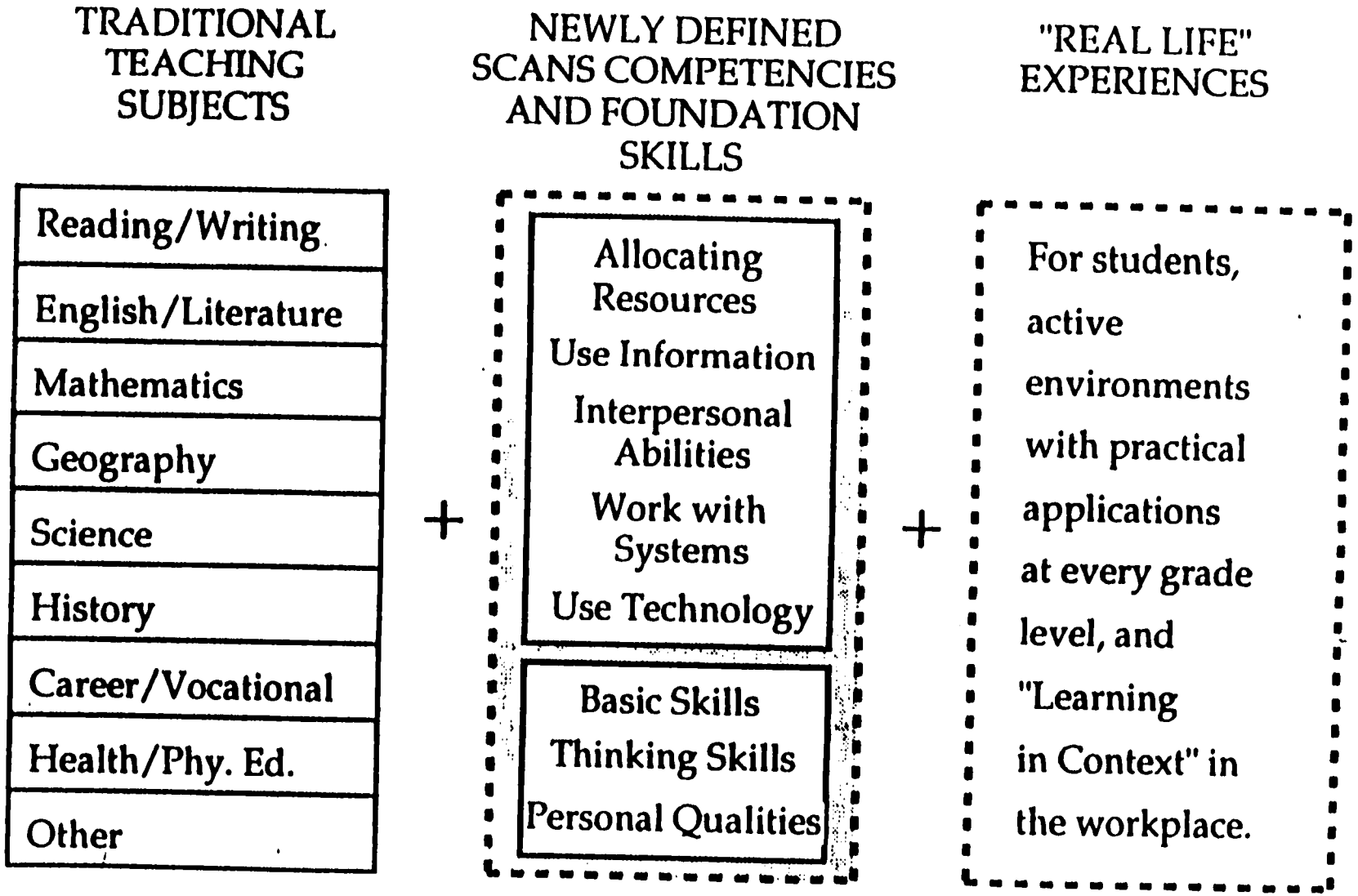
Content Standards:

What students should know and be able to do in each of the subject areas

Benchmarks:

What students should know and be able to do at various developmental levels.

INTEGRATION OF KNOWLEDGE, SKILLS, AND EXPERIENCES ESSENTIAL FOR PRODUCTIVE ADULTS



Timeline for Core Academic Curriculum

Jan 1994 **May 1994**	**Develop a core academic curriculum**
May 24, 1994	**Present broad student outcomes and content standards to Curriculum Frameworks Joint steering Committee**
June 9-10, 1994	**Recommend broad student outcomes, content standards, and draft rules to the Michigan State Board of Education**
Sept. 1, 1994	**The SBE shall submit, for public hearing, the proposed rules establishing a required core academic curriculum for all school districts**
Jan. 1, 1996	**The SBE shall submit the proposed rules to the joint committee on administrative rules**
1997-1998 School Year	**Local school board must provide the core academic curriculum that is required by the SBE**

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ABSTRACT

ATTITUDES OF EMPLOYERS AND HIGH SCHOOL TEACHERS TOWARD SKILLS NEEDED FOR THE WORKPLACE

by

JACQUELINE D. CASSELL

December, 1998

Advisor: Dr. Lola Jackson

Major: Curriculum and Instruction

Degree: Doctor of Education

This study had several purposes: determine perceptions of teachers and employers about the importance and use of competencies and skills needed by high school graduates to be effective in the workplace of the future; determine points of agreement between the two stakeholders; and use findings to generate new philosophies of curriculum and instructional strategies at Walled Lake Central High School.

A survey developed by Neal (1996) measuring the competencies and skills defined by the Secretary's Commission on Achieving Necessary Skills (SCANS) was completed by high school teachers and employers in one metropolitan community. Skill areas included basic skills, thinking skills, personal qualities, resource skills, systems and technology skills, informational skills and interpersonal skills.

Findings of the study indicated that teachers representing different disciplines equally perceived the importance of the skill areas. However, systems and technology skills were perceived significantly more important by counselors and administrators than by classroom teachers. Findings also indicated that employers representing different

occupations had similar perceptions of the importance of skills with the exception of basic skills, which was perceived significantly more positive by employers representing finance, insurance and real estate. There was significant disagreement on importance of information and resource skills, with teachers perceiving these skills more important than employers; otherwise, there was agreement on importance of the five remaining skills. The one significant finding of the study was that employers perceived the frequency of using the skill areas more positively than did teachers. Of the seven skill areas the only agreement was on the frequency of using informational skills. Although there were differences in perceptions of teachers based on staff development experiences and perceptions of employers based on relationships with the school district, these differences were not significant.

The major conclusion determined from this study was although teachers and employers agreed on importance of skills for the workplace they are seldom included in instruction. This conclusion directly impacts the need for integration of workplace competencies into public school curriculum and teacher education programs. The involvement of employers in curriculum development is also needed to improve school-to-work transition.

AUTOBIOGRAPHICAL STATEMENT

JACQUELINE D. CASSELL

EDUCATION

Ed.D.	Wayne State University, Detroit, Michigan, Curriculum and Instruction.
M.A.	University of Michigan, Ann Arbor, Michigan, Guidance and Counseling.
B.S.	Alabama A. and M. University, Normal, Alabama, Business Education.

CERTIFICATIONS/LICENSE

1997	Professional Counselor License (Renewal), State of Michigan
1996	Secondary Administrator (Renewal) and Central Office Administrator, State of Michigan
1979	Permanent Teacher Certification, State of Michigan Full Vocational Authorization, State of Michigan

PROFESSIONAL EXPERIENCE

Walled Lake Consolidated School District

1995-Present Assistant Principal, Central High School

Detroit Public Schools

1994-1995	Assistant Director, Breithaupt Career and Technical Center
1994-1989	Department Head of Guidance and Support Services, Golightly Career and Technical Center
1989-1991	Department Head of Guidance and Support Services and Department Head of Business Services and Technology, Golightly Career and Technical Center
1987-1989	Dean of Students, and Department Head of Business and Distributive Education, Northwestern High School
1987	Guidance Department Head, Redford High School

POST-SECONDARY TEACHING

1980-1986 Detroit College of Business, Dearborn, MI

PROFESSIONAL MEMBERSHIPS and AFFILIATIONS

National Association of Secondary School Principals
Association of Supervision and Curriculum Development
Oakland Secondary Principal's Association
National Association for the Advancement of Colored People
Detroit Alliance of Black School Educators