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**About this issue**

Blondeau covers career academies, schools within schools, and other descriptors are "hot" topics today. What is it about this type of educational organization that appeals to students and parents? Why are they effective in decreasing dropout rates, and motivating learners? These questions and more are answered in (Dr,) Blondeau's article. At the time of her research, Karen was a teacher of Health Sciences at a magnet school, Apopka High School. Based upon her dissertation Karen covers history of academies, describes a review of research and provides an extensive reference list. Always good to revisit our "roots" I appreciated the history of academies and found it fascinating reading.

Hallock tackled the issue of technical skills as part of the interview and screening process for auxiliary dental Students. The results of her research go far beyond dental areas to all health careers. We must be more aware of and sensitive to our biases in serving students. It is not onl for the students but the employers and population as a whole.

Stackhouse describes the use of community service as a teaching component in health sciences. Use of community service requires commitment, planning, and partnering to be effective. The teacher is central to successful community service of students.

Herman provides a book review offering us insight into applications of a book for reference or as a text.

Lastly, Whiteman provides a broad base approach review of Workforce Performance.. We must be knowledgeable about labor statistics and able to use that information.

We hope you enjoy this issue.

Most sincerely,

Larry Hudson, Ph.D. Editor

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# The Career Academy in the American High School

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## Abstract

The Career Academy in the comprehensive high school has had phenomenal growth in the United States since the first was established in 1969 as a drop out prevention program in Philadelphia, Pennsylvania. The movement spread to California where it flourished, indeed the only state to define career academies by legislation. Career academies now number more than 1,500 nationwide. The concept is not new, however, and traces it roots to colonial times and back to the German continuation model. Research shows that for high-risk students in career academies, drop out rates are lower, students are more engaged in the curriculum, and they continue on to postsecondary education at a higher rate than their peers in the non-academy. They also have improved job performance over their non-academy peers upon graduation. This article, based upon a doctoral dissertation, traces the evolution of the career academy to the present and presents recent literature regarding graduates' performance.

# THE CAREER ACADEMY IN THE AMERICAN HIGH SCHOOL

## INTRODUCTION

Borrowing a metaphor from the field of optical physics, the discussion regarding American high school reform is analogous to light passing through a prism. The light of this discourse separates into three major fractions: school size, curriculum relevancy, and outcome assessment. The large urban and reorganized rural, comprehensive high schools are one fraction of the discourse. Accordingly, many districts have restructured these large institutions to create schools-within-a-school (SWS) where students become members of smaller learning communities. Usually the SWS, organized around a common career theme (hospitality, finance, law, health, agriculture, etc.), integrates academics with a theme-based career curriculum. Many federal agencies and programs require, and most states implement outcome assessments as a component of continued funding. This discussion focuses on a school design model that addresses many aspects of the current reform discussion, the career academy.

Research indicates that especially for the high-risk student population, students benefit from attending a career academy. The drop out rate in SWS academies is lower for the high-risk student compared to their peers in the general curriculum track. Furthermore, members of this special population continue on to postsecondary education at a higher rate than their peers do (Stern, Dayton and Raby, 1988; Maxwell and Rubin, 1997). Not only is there a positive impact on high school performance for academy students, increased high school attendance leads to improved job performance and work

attendance (Linnehan, 1996). Further research following academy graduates after high school reveals that postsecondary performance may be guardedly optimistic.

Although the career academy model has been successful in lowering high school dropout rates, and in increasing academic skills for all academy students, postsecondary performance is not consistent. A larger percentage of academy graduates apply to 4-year colleges than do non-academy graduates, but the proportion of students from both groups who graduate compared to those who drop out of college are nearly the same. Not all career academy graduates need remediation in English and math at the university level, but the effect of academy attendance does not reduce this number to zero (Maxwell, 1999; Maxwell and Rubin, 2000). In fact, for one California district studied by Maxwell (1999), over half of the academy applicants needed both math and English remediation before taking university-level course work, compared to 40 percent of non-academy graduates from the same high school. Conversely, university matriculation is only one of many possible outcome measurements, and is not the only measure of success for this type of special program.

Despite the fact that career academies cannot be "all things for all people," they continue to gain popularity across the country. This paper traces the evolution of the career academy from colonial America to the present. The discussion begins with the events leading to the creation of the career academy model, and concludes with a review of research findings.

## HISTORICAL OVERVIEW

The American career academy, a name first used by Stern, Raby, and Dayton (1992), began in Philadelphia in 1969 as a dropout prevention program featuring integrated academics with vocational training. The career academy experienced resurgence in popularity with the implementation of the School-to-Work Opportunities Act of 1994, which specifically authorized their establishment (Kemple and Rock, 1996). Since the inception of the Philadelphia academy, the concept's scope has broadened to include all student levels and abilities, not just the high-risk student. Yet, despite a prominent role today, the concept that began with Philadelphia's Electrical Academy at Thomas Edison High School was not the first of its kind. The American academy model in its current iteration has roots in colonial times.

### The Colonial Model

Schools in colonial America had simple goals: equip children with the basic skills, reading and arithmetic, so that they could contribute to building the new nation. Ironically, in a country founded on the ideals of personal freedom, students received an education based on class stratification. The numbers of children who attended school were small, and the numbers attending secondary school were smaller yet--coming from the ranks of the privileged. Many young children were home-schooled until they were of an age and size to contribute to the livelihood of the family, and for most of these children, home schooling marked the end of their formal education. Schools as separate buildings began as small locally controlled one-room town schools with a curriculum consisting of the "3-R's," the essential skills for an uneducated populace.

The sons of the privileged upper class attended Latin Grammar Schools, a form of secondary school that began in Boston in 1635. Boys entered the Latin school at age eight or nine, and graduated eight years later. The purpose of the Latin Grammar School curriculum was to prepare these young men for college. Graduates were prepared to enroll in the colonial colleges, among the first, Harvard, Yale and later, Princeton and, William and Mary, to follow professional career paths -- law, medicine, theology, and education (Ornstein and Hunkins, 1993).

Elective course selection for the masses did not to appear for many years and specific work or vocational skills were taught at home or through apprenticeship programs.

## The American Apprenticeship Model

Colonists brought the custom of apprenticeship to America, without the characteristics of the guild or craft organizations in Europe. Although apprenticeship became an important educational system in America during the years prior to the Industrial Revolution, one aspect of the system is arguably the most controversial. With a scarcity of trained laborers and craftsmen in America, many migrated from the overpopulated English cities to enter indentured servitude. As slave trading flourished in America, white servitude declined while at the same time, apprenticeship all but replaced indentured servitude. To set apprenticeship apart from servitude, the American system, modeled on the English Statute of Artifices passed in 1562, included educational aspects. In fact, for the poor this became the only route to an education in colonial times. Apprenticeship followed two forms. The voluntary form was similar to the classic

European model. By contrast, the involuntary form included a provision for a designated "master" who took care of the apprentice's personal and occupational needs, and provided the professional expertise in the trade (Gordon, 1999).

By comparison, in the Latin School a young boy entered at age eight or nine, and left eight years later. Young boys and girls entered apprenticeships at about the same age, and remained there for periods from five to ten years. The master and apprentice entered a formal written contract. This contract became a public document for the protection of both parties. When the apprenticeship ended, and the apprentice had duly learned his (generally) trade, they were allowed to practice. If the apprentice was found to be sub-standard, either they were banned from the trade, or continued by contract in the apprenticeship. As the nation became more industrialized and mass product manufacturing replaced the art of tradesman and craftsmanship, apprenticeships declined in the public sector and became the responsibility of business and industry (Gordon, 1999; Kleibard, 1999).

## The Early Academy Model

Subsequently, in 1751 another form of secondary institution in America began to replace the Latin Schools--the academy. The purpose of the academy evolved from the classical curriculum of the Latin Schools, except the formal study of Latin was no longer a focus of the curriculum in the new model. Based on the educational precepts of Benjamin Franklin, the colonial academy's focus was not originally on the college-bound scholar. Instead, this alternative curriculum offered more practical and vocational

subjects, such as carpentry, engraving, and cabinet making, in addition to an academic curriculum (Best, 1962).

The early American academy originally offered a dual track, college preparatory, and a practical program. By 1855, more than two-thirds of all secondary students enrolled in academies. The curriculum included such diverse offerings as classical and modern languages, grammar, geography, arithmetic, algebra, chemistry, logic, and astronomy (Ornstein and Hunkins, 1993). Vocational skills relegated to a secondary function, the academy played an important role in college preparation, especially in New England where they flourished, and throughout the Mid-Atlantic and South during in the college-founding nineteenth century.

Rudolph (1962) described the growth of colleges in America during the 1800s as an undertaking similar "in spirit as canal-building, cotton-ginning, farming, and gold-mining, and in none of these did rational procedures prevail" (pg. 48). Eventually many of the first academies became colleges themselves, or were absorbed into larger universities. Again Rudolph observed, "offer a young man the principalship of an academy and he will try to make a college of it" (p. 48). Academies flourished until the 1870s when the public high school became popular, then their numbers declined (Rudolph, 1962).

## Vocational and Manual Training in America

As these models evolved, a series of historical events brought manual

training, or vocational education, into and out of vogue, reflecting America's ambivalence toward its place in the public school. The discourse surrounding vocational education rose to a crescendo by the turn of the twentieth century.

The economic panic of 1893 and resulting depression prompted the founding of the National Association of Manufacturers (NAM). Their purpose was to organize American manufacturers in an effort to reduce overproduction and stem the recession, and to examine and venture into foreign markets. NAM also lamented the lack of skilled labor in the United States and the resulting cost to industry, and placed significant blame on the educational system that neglected vocational programs (Gordon, 1999; Kleibard, 1999). In due course, NAM drafted a report in 1912 that endorsed changes for American education to address these concerns. Their recommendations included

- the creation of German-style continuation schools
- the development of courses centered on the needs of local industry
- the administration of the schools by coalition of business and labor to ensure that industrial education not be corrupted by educators the way manual training had been, and
- the use of federal funds to improve industrial education as the Morrill and Hatch Acts had improved Agricultural Education (Gordon, 1999, p. 52)

Additionally, NAM identified what they believed to be the three distinct classes of students in American schools, each with their own educational needs. The three classes were,

- the abstract-minded and imaginative children,

- the concrete or hand-minded children, and
- the great intermediate class (Kleibard, 1999).

The needs of the abstract-minded were met by the traditional curriculum. The needs of the intermediate class should be addressed by more practical coursework, typified by the curriculum offered in the German continuation schools (Crowson, Wong, and Aypay, 2000). NAM also believed that the German model would better serve the hand-minded, the group that they thought to be the most neglected and abandoned in the educational system. They left school "unmindful, uninformed, and inconsiderate" (Kleibard, 1999, p. 32) and they left school at an early age--indeed 80% dropped out before high school (Kleibard, 1999). NAM offered a solution; pre-vocational programs and manual training in elementary schools, a system of intermediate high schools, and an educational system modeled on the German continuation schools. NAM identified the age for training youth as the period between fourteen and sixteen since that is the time of "idleness and evil associations" (Kliebard, 1999, pg. 31).

The recommendation to convert the American educational system to the tenets of the bifurcated German model met with harsh opposition from unlikely allies, labor and education. The German system was observed by opponents to be deeply class biased, going against the precepts of an egalitarian American society. That business and industry could control vocational education, and ultimately the numbers of workers, concerned organized labor. This position in turn, infuriated NAM, who described organized labor's response as "a crime against the youth of the whole nation" (Kleibard, 1999, p. 30). One outspoken opponent of NAM's position was the educator and philosopher John Dewey, a staunch supporter of the value of vocationalism in public schools. Dewey argued that the

German nationalistic system was unworthy and not compatible with the democratic goals of the United States (Dewey, 1912). Introducing a class-based educational system at a time in American history when "equality and rugged individualism were important concepts" doomed the early movement (Ornstein and Hunkins, 1993, pg. 77; Crowson, et al, 2000).

NAM's zeal to institute their curriculum concept was also tempered by the realization that federal funding would be necessary to institute and maintain these programs, a problem that continues to vex America to the present. Although vocational and manual training became part of the American system, they have never occupied the same status in the United States as in Europe, particularly in Germany. Nonetheless, efforts to integrate academics and vocational training to respond to workplace demands continue into the present generation of career academies in American high schools.

## The Comprehensive American High School

The United States' public secondary school enrollment (grades 9-12) for Fall 2009 is projected to be 14,699,000 students, compared to the mere 200,000 enrolled in all public schools in 1890 (NCES 2000-062; Ornstein and Hunkins, 1993). The academic and vocational offerings of the comprehensive American high school have expanded far beyond the Latin Grammar School and colonial academy, as has the high school mission.

When first established, the high school became the college preparatory curriculum that replaced earlier models. High schools allowed access to education for children from all socioeconomic groups. Part of its role was to provide vocational training for those students who were not going on, the so-called "terminal" student. The glorious egalitarian

comprehensive high school, with a wide array of course offerings was America's answer to the class biased German system. What early high school leaders could not have imagined would be the policy issues currently raging in America: national standards and assessments, the funding crisis, diversity and lingualism, desegregation, charter schools and vouchers, and a host of curriculum relevancy issues.

With the rapid and often chaotic early growth period of the high school, the need to unify and standardize the curriculum was recognized. The motivation for this effort came from a desire to enlarge the college preparatory role of the high school. The National Education Association (NEA) organized the Committee of Ten on Secondary School Studies in 1892 with the intent of creating a standard curriculum. Rejecting the vocational curriculum as inferior and counter to the goal of high school, a traditional curriculum was created consisting of four tracks, or compartments. Ornstein and Hunkins (1993) describe them as 1) classical; 2) Latin scientific; 3) modern languages; and 4) English (p. 85). This zeal to create a system of college preparation met with criticism, as is the fate of change in any aspect of American education.

The concerns expressed were by those closest to the issue--educators. High school, according to the teachers, was becoming overly focused on college entrance. Too much time was spent on drilling content, and cramming for entrance exams. Educators condemned the system for not focusing enough on the holistic development and interests of each individual child. Theorists of the likes of Dewey and Flexner railed against what the system had become, yet in this century, the legacy of the committee remains. Accountability equated with "seat time" and standardized test results.

Consequently, the NEA convened the 1918 Commission on the Reorganization of Secondary Schools, which issued the "Seven Cardinal Principles" of education. Their aims of education should include: health, the command of fundamental processes, worthy home membership, vocation, citizenship, worthy use of leisure, and ethical character (Ornstein and Hunkins, 1993). The curricular offerings should be expanded to meet student needs in a growing society, and be responsive to current research. The first steps toward the comprehensive high school were undertaken.

Over time colleges and universities would make it mandatory for students to have proof of high school graduation in order to apply, thus securing the place of the high school in American society. James Conant described the comprehensive high school as an American invention (1967), and as continuing insurance for the preservation of the vitality of a society of free men (1959). Yet, teachers and students are compelled to continue making compromises to assure that the school keeps functioning (Sizer, 1984), somewhere between the egalitarian postsecondary ideal high school and Conant's vision of a comprehensive high school. In subsequent years, resulting from the tremendous population surge of the 20th century and its impact on the public schools, the pendulum of reform would swing back to a new focus.

## THE CAREER ACADEMY AS A MODEL FOR REFORM

In 1983 a powerful critique, A Nation at Risk (National Commission on Excellence in Education, 1983) thrust America into one of the more challenging and public reform periods in its history. A call to arms, the report recommended action that if taken immediately would set the wheels of repair for an ailing system in motion. One

recommendation was for a rigorous and relevant high school curriculum to provide students the opportunity to pursue subjects advancing their personal and educational goals. The recommendation also included an emphasis on vocational education complementing a curriculum that "returns to basics" (U.S. Department of Education, 1983).

Dale Parnell espoused a new model that could help achieve this goal. Holding the view that a high school college preparatory curriculum and the only other available option, a general education track, neglect the majority of students, Parnell proposed the Technical Preparation (Tech-Prep) and 2+2 plan. This curriculum alternative was idealized as a response to school systems that no longer prepare the majority of students for work or college (Parnell, 1993). Tech-Prep is a 4-year sequence of study beginning in the 11th grade (the first two years) through two years of postsecondary occupational education. The process culminates in a certificate or associate degree.

Adding to the school reform discussion, the reality of a global economy and the changing nature of employment opportunities contribute to the need for a high school diploma as the minimum entry-level prerequisite to work. In 1998 for age groups 25-34 (both genders), those who complete at least a bachelor's degree earned 56 - 100 % more than those with less education. The 25-34 year-olds who dropped out of high school earned 30 - 31% less than their peers who graduated (NCES 2000-062) did. Retaining students, providing a meaningful, relevant school curriculum, and measuring outcomes are priorities for the 21st century.

A growing reform movement, the career academy has become an integral part of the curriculum relevancy discussion, promising to bridge high school and the

postsecondary work world. This program embodies the concepts implied in the admonitions of A Nation at Risk, and the promises of the Tech-Prep initiative--and it is no longer offered exclusively to the at-risk student (Kemple, Poglinco, and Snipes, 1999). Theoretically, a career academy graduate is prepared to enter the world of work, or to enroll in postsecondary education linked to the theme of the program. A logical progression for many graduates is matriculation into a partner community college, fulfilling Parnell's vision of collaboration between secondary schools and community colleges.

## The Career Academy

Several essential features distinguish the career academy from other SWS models and from early colonial academies. As described by Stern, Raby, and Dayton (1992), the career academy shares one or more of the following features.

- School-within-a-school. The program may be organized by grades 9-12, 10-12, or 11-12. A team of teachers runs the school, from a variety of academic and vocational disciplines.
- Recruits students who volunteer for the program and demonstrate their commitment through an application process.
- Focus or theme is a career field in which there is a demand and good employment opportunities in the local labor market. The curriculum combines technical and academic content. Students usually take one technical and at least three academic courses each semester. The academy prepares students for either vocational or academic postsecondary options.

- Students are employed over the summer between school years in the field of study. Part-time employment during the regular school year may occur in some schools.
- Employer representatives from the academy career field help plan and guide the program. This may involve representatives as guest speakers, field trip hosts, job supervisors, and mentors.
- Class size is usually smaller than the typical high school, and possibly smaller than the larger population in the host school. Motivational activities, rewards, and parental contacts contribute to the students' sense of membership in a smaller learning community.
- Funded by combinations of federal, state, and district money. Some programs receive funding from business and industry. Operating costs are often higher than non-academy programs. (Stern, et al, 1992, p. 14-15)

Although there is no one model for an academy, most of these features are common to each one. Many districts adopt both the school-based and work-based components of the model. School-based models incorporate theme-based academy courses within the academic programs. Work-based models include some form of internship, often in the summer after the junior year (Maxwell, 1999).

The first career academy, the Electrical Academy in Thomas Edison High School, was initiated by the Philadelphia Urban Coalition. The program addressed Edison's dubious distinction of having the highest dropout and lowest attendance rates in the city. The program targeted the at-risk drop out population. The success of the first school led to the establishment of eight different academy programs in sixteen Philadelphia high

schools by 1991. The first academies followed traditional high school vocational education curricula. The exception was the health careers academy, the first to integrate college preparatory courses into the curriculum, setting the tone for career academies across the nation (Stern, et al, 1992).

The movement spread to Northern California by the early 1980s. In 1984 California became the first, and only, state to define career academies by legislation. At the same time, businesses were forming partnerships with New York public schools with the purpose of establishing career academies. The first was the Academy of Finance established at John Dewey High School in Brooklyn, in partnership with American Express Company. Later, buoyed by the early success of the model, American Express helped to establish more academies in New York City, and Miami (Stern, et al, 1992). By the year 2000, more than 1,500 career academies are in operation in school districts across the country each with a variety of career-based themes, and school organizational methods (Kemple and Snipes, 2000).

## Career Academy Student Performance

In today's global and technological economy, few employment opportunities are available to students who have only the high school diploma. A measure of how well academies fulfill their mission to prepare students for this new world is to examine how academy graduates compare to their non-academy peers. In fact, a number of studies published recently attempt to study this aspect of the academy. One national study that will likely make an important impact on career academy research is the 10-year Manpower Demonstration Research Corporation currently underway.

The U.S. Departments of Education and Labor, as well as seventeen private foundations and organizations, employed Manpower Demonstration Research Corporation (MDRC) in 1993 to undertake a 10-year study of students in nine career academies across the United States. In phase one, over 1700 students are being followed as they progress from the eighth or ninth grade through the end of their 12th grade year. The second phase will follow these students as they transition from high school to postsecondary continuing education (Kemple and Snipes, 2000). In February 2000, MDRC issued the report "Career academies: impacts on students' engagement and performance in high school". Among their findings:

- School-within-a-school (SWS) academies increase the likelihood of graduating on time for students least likely to drop out of high school. For both low-risk and high-risk students, there is an increased occurrence of academic course taking. SWS high-risk student dropout rates were reduced, and attendance increased.
- Medium risk students showed little or no change in outcomes from non-academy peers, but this result varied depending upon the academy.
- In academies where students received interpersonal support from teachers and peers, school engagement increased for both the high-risk and medium-risk students. Where this engagement was not present, drop out rates were higher. When the aggregate data from all risk groups is averaged, however, only modest improvements were noted.
- Academies had no effect on students' standardized reading comprehension and math tests.

Three years earlier, Maxwell and Rubin (1997) reported the following results from their study of "The relative impact of a career academy on post-secondary work and education skills in urban, public high schools." They found that students in career academies compared to students in general education or vocational tracks have,

- An increased rate of graduation from high school compared to students in the general education track,
- An increased rate in attending a two or four year postsecondary institution,
- Greater variety of skills
- A decreased need for English remediation in college
- Increased probability of college graduation

The findings also suggest that "there may be an interaction between curriculum and demographics" regarding the attainment of educational benchmarks -- graduation from high school, attending college, or attending a 4-year university (p. 15). Specifically, career academy programs increase attainment over general and vocational tracks for females, African Americans, and native English speakers. However, for males, Latinos, and non-native English speakers, there was no significant impact on attainment (Maxwell and Rubin, 1997).

Academic and Vocational Integrated Curriculum

The career academy model emphasizes the integration of academic and vocational curriculum as a method to improve students' postsecondary opportunities. Three U.S. Department of Education longitudinal studies report the findings of graduates with vocational coursework and academic preparation, compared to those with only vocational

or academic coursework. Although these studies do not specifically identify students enrolled in career academies, since the integrated curriculum is a feature of the academy model it is useful to examine these groups.

The Beginning Postsecondary Students Longitudinal Study (BPS:96/98), follows a cohort of high school graduates, class of 1995-1996 (NCES 2000:154 and 157). A longitudinal study of the postsecondary choices of high school vocational completors is embodied in Vocational education in the United States: toward the year 2000 (NCES: 2000-029). Together, these studies provide an understanding into what students tend to do following high school graduation.

Nearly three fourths of public high school graduates in 1992 enrolled in a postsecondary institution within two years of graduation, compared to about 50 percent in 1982. For all 1992 high school graduates, 36.7% enrolled in public two-year institutions (traditionally termed the community or junior college) within two years of graduation (NCES: 2000-029).

Of particular interest are the following groups identified in these two categories. A vocational completor is a student who takes at least three units of vocational courses. A vocational concentrator is a student who takes three units of vocational courses in addition to a college preparatory curriculum. Completors with just three units of vocational coursework and a general high school curriculum are less likely to enroll in a postsecondary institution than their college preparatory peers. Vocational concentrators had enrollment outcomes approximating the college preparatory students (NCES:2000-029)

The public two-year institution (community or junior college) received 58% of the students with only a vocational concentration (no college preparatory), compared to 22% of the students with a vocational concentration combined with college preparatory courses (NCES: 2000-029). For those students beginning at two-year institutions within three years of high school graduation, 18% attained either a certificate or an associate's degree. Thirty-five percent left postsecondary education entirely. Twenty-four percent of those still enrolled, left postsecondary education before their second year, and after three years nearly 40% of those still enrolled left without completing any degree program. Twenty percent of those still enrolled transferred to another institution (NCES:2000-154, 157).

## SUMMARY AND CONCLUSIONS

This article began by comparing education reform to light passing through a prism. When the different wavelengths separate, one sees the many colors that comprise a light beam. When one looks at education reform, one sees the many fractions of discourse that comprise the whole of the discussion.

In The Neglected Majority (1993), Dale Parnell argued that American education produces a lost, or at the least, adrift generation. He attributed this to a meaningless and disconnected high school curriculum. This neglected group is the middle fifty percent of high school students who bide time in a useless general education curriculum--coursework neither preparing them for work nor college. The upper 25% are directed into a college-preparatory (college prep) sequence, and the lower 25% follow the traditional vocational track (Parnell, 1993). The increasing number in the middle majority drift into college prep, then drift out when they find they are not suited for it

(Gray, et al, 1995). The majority is left with a non-directed and irrelevant education. From this group comes the highest percentage of high school drop-outs while it produces the largest share of the American work force (Parnell, 1993). In the early 1900s, NAM identified a similar group as the hand-minded, the group that they thought to be the most neglected and abandoned in the educational system. In either case, the school curriculum was determined to be the culprit.

Throughout history, the American public school has been expected to morphologically alter to respond to the external press of society. In less than 150 years, the simple curriculum in the colonial period evolved into the comprehensive high school housing thousands of students of varying abilities and exceptionalities, and offering a vast array of curriculum options. In the latest iteration, the American school is expected to take students to the next level, that of being productive citizens in a global and technological society.

Crowson, et al (2000) describe these forces as coming together in a "quiet revolution" in the way America prepares children for the world of work. They caution that the revolution could come and go without being noticed, and without major impact. Yet, the revolution is still new and holds the potential for real reform.

The career academy is one school design model that retains features proven to produce engaged learners; a small school environment that connects the individual to a relevant curriculum. Research reveals that not all gains made by academy students are significantly higher than non-academy peers, however there are intangible benefits to academy attendance.

Successful theme-based career academies have a sense of purpose and mission. Students from low as well as high-risk groups achieve in a smaller learning community environment. The curriculum integrates academics situated in the context of career experiences. A team of committed faculty mentors engaged students. These intangible qualities are the embodiment of a "good high school" as described by Lightfoot (1983), and are difficult to measure as outcomes. However, empirical research indicates that the academy has measurable benefits for students both in high school and afterwards. It remains to be seen whether the career academy model will continue to build on its success as it enters a fourth decade. If it is to succeed the movement must practice the humility of self-examination as described by Sizer (1993). Career academies must admit their shortcomings, and build on their strengths if indeed is a part of a revolution that will not go away.

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# The Use of Technical Skill Standards in the Admissions Process for Florida Allied Dental Health Education Programs

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## ABSTRACT:

The purpose of this study was to determine if there are allied dental health education programs within the State of Florida currently using Technical Skills Standards (any non-academic abilities or requirements necessary to perform the job) as part of their applicant counseling and admissions process. In addition, the research was to determine faculty's knowledge of the Americans with Disabilities Act and its impact on the admissions policies and procedures of their programs was examined. The program faculty and administrators representing 27 institutions throughout the State of Florida offering accredited, Dental Assisting, Dental Hygiene, and Dental Lab Technology training programs were surveyed as experts in their field.

Analysis of the responses suggests that a majority of those surveyed from the three disciplines agree that there should be published technical skill standards used for program admissions purposes. In addition, although a majority of those surveyed were found to have some knowledge of the Americans With Disabilities Act (ADA) enacted in 1990, approximately 96% responded negatively regarding this federal mandate's affect on the admissions criteria for their program. As baseline statistical information, the data from this project serves to provide educators and program advisors in Florida allied dental health education programs an opportunity to assess the opinion of their peers and colleagues regarding the current need to establish and adopt uniform, statewide technical skill standards for dissemination to all potential program applicants.

## INTRODUCTION:

It would appear that today, more than ever, it is important to ensure that work-based training programs are informing potential program applicants of the minimum physical, emotional, and intellectual technical skill standards required to successfully complete an occupational education program. This is particularly true in higher education where the opportunities for people with disabilities in employment training are expanding (HEATH Resource Center, 1987). A wide range of programs, including vocational and occupational courses are provided, as a low- cost educational alternative for individuals in the local geographic area surrounding the Community College (HEATH Resource Center, 1993).

When educating individuals for employment, however, one of the most critical areas of concern is the emphasis on the need for qualified and skilled workers (Scott, 1997). Based on the most recent statistical reports from the Bureau of Labor and Statistics, in both national and regional areas, employment in health care occupations is on the rise (BLS, 1998). Therefore, there is a need to answer the question "What does a worker need to *know* and be able to do to contribute to the safe and effective delivery of health care?" has now become a student success issue, an employment issue, and a legal issue for future educators, students, and employers (Far West Laboratory, 1995, p.1).

## Purpose and Research Questions:

The purpose of this research project was to investigate and describe the extent that declared Technical Skills Standards, referring to the essential, non-academic abilities or requirements needed to perform the job, were being used in the admissions process and

counseling of program applicants for allied dental health education programs in the state of Florida. In addition, the knowledge and impact of the Americans With Disabilities Act (ADA) on admissions policies and procedures was examined.

To expedite the research, the following objectives and research questions were critical in the investigation of this topic and were the focus of the survey:

(1) To determine if there are technical skills standards, that currently exist for the accredited dental hygiene, dental assisting and/or dental laboratory technology education programs established in the State of Florida.

**Research Question**: What is the status and current use of Technical Skill Standards in the admissions process of accredited allied dental health education programs throughout Florida?

(2) To determine the degree of familiarity of educators (as experts in the field), regarding the Americans with Disabilities Act (ADA).

**Research Question**: What is the current knowledge of discipline experts in the field of the Federal statute, the Americans With Disabilities Act of 1990 and its impact on the admissions process of their programs?

(3) To summarize opinions of educators, as experts in the field, regarding the need for:

a. Uniform, published technical skills standards for each specific institution and each educational program discipline.

**Research Question**: Should there be uniform technical standards for each allied dental health discipline? and,

**Research Question**: who should establish these technical standards?

## A Student Success Issue:

It seems in our current workforce development system, knowledge associated with higher education, particularly advanced technical or college-level training, is considered a key element in an individual's level of self – esteem, confidence, and ultimately a measure of their potential for success. Research has shown that this established relationship between a college education and gainful employment has resulted in a marked increase in enrollment in some post-secondary technical and vocational training programs by today's high school students, especially those with disabilities (HEATH Resource Center, 1993).

Most guides and manuals available in bookstores offer a wealth of information on how technical training and a college education can result in improved employment opportunities for graduates with disabilities. With that in mind, it would seem a current issue in need of research is the type and extent of disabilities a specific occupational area can successfully accommodate with the entry-level worker? Moreover, what minimal physical requirements or abilities need to be identified as required for the applicant to a technical/vocational program to insure the student's success?

## An Issue of Definition:

Based on legal definition, a disabled individual is essentially anyone with a physical or mental impairment that substantially limits one or more major life activities (ADA, 42 USCS 12101). Albeit, by definition, "substantial" would indicate something more than minor or trivial in nature, the federal courts have historically been battling with this issue, as evidenced by the multitude of cases referenced throughout the literature on disability law (Thomas, 2000). Research indicates that the types of disabilities experienced by

people can vary widely and can include physical (e.g. quadriplegia), mental (e.g. anxiety), sensory (e.g. deafness, blindness), cognitive, intellectual, and health related factors. Functional limitations from a disability may range between negligible to profound. Disabling conditions may be temporary in duration, but most are life-long and some are ultimately fatal. Disabilities may virtually be invisible, in that they are not readily noticeable by others, but they can be found in every age group, gender, ethnic and racial segment, educational and socioeconomic level of society. Each kind of disability produces its own special needs and must therefore be carefully evaluated (Scott, 1997). According to the U.S. Bureau of the Census statistics, people with disabilities constitute the single largest minority group identified in the United States, surpassing the elderly and African Americans (Wells & Hanebrink, 1998). It is not surprising, then, according to statistics from HEATH Resource Center, in the 1998 published Profile of 1996 freshmen with disabilities, that there are more students with documented disabilities in higher education than ever before (Thomas, 2000). Therefore, it would seem important to investigate our health related occupational programs to see if they are prepared in the process of recruitment and admissions to address the Technical Skills Standards (e.g. essential, non-academic skill requirements) required for the specific program's level of training and minimum entry-level skills; and to examine our technical training programs' compliance with the law, when planning to accommodate the training needs of a disabled student in our particular occupational area.

## A Legal Issue

It would seem that society has become increasingly aware of how individuals have historically been and are continuing to be discriminated against. It seems to be a

serious and pervasive problem in our society. Early on, Federal Civil Rights legislation ranging from the Title VI of the Civil Rights Act of 1964, to Title VII of the Civil Rights Act of 1968, to the Mental Health Bill of Rights Act of 1985, and the 1975, Education for All Handicapped Children Act and the Developmental Disabilities Assistance Bill of Rights Act, all attempted to address the inequities in programs and activities involved with the government and funding.

More recently, the support for people with disabilities has grown into a "sociopolitical force" (Wells & Hinebrink, 1998). Enacted to protect and provide equal opportunity to the disabled, the Rehabilitation Act of 1973, as amended in Section 504, and the Americans with Disabilities Act of 1990 affirmed the view that the growing population of those with disabilities were being subjected to persistent discrimination. Specifically, Section 504 of the Rehabilitation Act of 1973 states that no otherwise

> "qualified" person due to a disability may be denied participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance"

(Scott, 1997). Therefore, it is important for postsecondary institutions, as well as individual training programs, to understand the principles set forth in the provisions of these statutes to insure compliance with the requirements and spirit of the law (Petesch, 1999).

In most instances, and in this specific example, post-secondary technical/vocational educational training programs are open to all qualified individuals

(BCC Catalog, 2000). Because some health occupations offer only limited enrollment, however, admissions officials or committees use multiple criteria and attempt to identify those candidates who are best qualified from the pool of applicants. Ultimately, then the question is what is (or is not) required in a particular discipline area to constitute a "qualified" student who will upon completion of the training program become an entry-level employee in the field (Scott, 1997). It would seem, without uniform, established performance standards that are published requirements for *all* students to agree to for admission into the program, this process could be construed as subjective in the eyes of some individuals and ultimately in a court of law.

## An Issue of Safety:

Apparently, the American Association of Dental Schools (AADS) has previously addressed the issue of "Minimum Standards for Admissions and Matriculation" in their article published in the Journal of Dental Education, May 1998. This article was prepared to assist *dental schools* respond to the legal requirements set forth by the Americans With Disabilities Act (1990) and Section 504 of the Rehabilitation Act of 1973. It provided in-depth descriptions and examples of Technical Skills Standards to aid schools of dentistry prepare and modify specific standards to be used in their program's admissions process. Many of the allied dental health programs within the university setting of a dental school followed their lead and established blanket minimum, technical skills standards for all dental career training.

However, not all allied dental health education programs are affiliated with a four-year dental school. There appears to be a possible need to address the Technical

Skills Standards issue at the associate degree (and certificate) levels. In fact, only one dental hygiene and one dental assisting program in the State of Florida presently, based on location and close proximity, have apparently utilized similar stated admission policies and criteria, patterned after an affiliated college of dentistry, as part of a broad, dental programs' application process (ADA,2000)

The unique nature of dental education programs, which have some similar clinical performance aspects between dental practitioner training and the allied dental health training for auxiliaries, is based on the fact that students must perform critical thinking as well as provide oral health care services safely for clinical patients (Virginia Commonwealth University, 2000). The ability to perform, or to learn to perform these essential skills will ensure patients are not placed in jeopardy by allied dental health students or dental practitioners with impaired intellectual, physical, or emotional functions. It is viewed as part of the faculty and institution's responsibility to the educational welfare of the student, as well as the welfare of the patients treated or otherwise affected by the dental program's students (Indiana University School of Dentistry, 1999). Therefore, it seems logical that admission to dental or allied dental health programs should be offered to only those who present the highest qualifications to acquire the knowledge and technical functions to meet the full requirements of the program's curriculum. Ultimately, according the institutions that have published minimum skill standards for admission and retention purposes, the outcome is a graduate that is can demonstrate the skills necessary to be a *safe and* effective dental career professional.

## Assumptions and Limitations of the Study:

It was assumed that because this data was collected predominantly from a group of respondents converging at a central location for an annual professional meeting, that a majority of the statewide-accredited programs would be represented and that all those in attendance would complete the survey questionnaire honestly and with sincerity.

By providing accurate responses to the survey questions regarding their knowledge of performance-based Technical Skills Standards, the ADA, and their program's specific admissions process, very little bias in interpretation of the responses was anticipated based on the initial process undertaken by the researcher to develop a simple, yet specific survey instrument to be used. The possibility for limitations presented by the wording of the self-generated research instrument and how the questions were formatted may ultimately have had an affect on the validity of data analysis and the conclusions derived from the responses given.

The convenience and timeliness of the conference for Florida Allied Dental Health Educators helped provide a captive audience of informants and served as an opportunity to personally explain and administer the survey to those present, in hopes of a strong return rate. It was also deemed cost effective and simple in terms of logistics, but presented a limited, and small sample population for data collection and analysis

Ultimately, the willingness to participate in completion of the survey and to return the document, provided it was not lost or misplaced, was an inherent limitation of this method of data collection which may have affected the final response rate and ultimately the inferences made from the sample. The expectation of the return of subsequent mail-out surveys, to schools not represented at the conference, was slightly less than expected due to the researcher's lack of control over which respondents would actually complete

and return the questionnaires. In addition, to that limitation, the ability to identify sample non-respondents, in order to re-contact those non-compliant individuals was a bigger issue to consider with the limited size of the sample.

It was assumed that the convenience sampling used for this project would represent a relevant portion of professionals who, based on their experience in the field and their knowledge about their programs, would yield accurate data and justified the reality of the narrow sample size. It does however, present limitations to the nature of the results and conclusions of the project. Because of the questionable representativeness of the sample used for data collection, the results and findings of this project will not be generalized to dental health education programs in other regions or nationally, but will apply only to those programs who faculty responded within the State of Florida. In light of this obvious limitation, the opportunity for replication of this research on a larger scale in other states or at a national level is a consideration.

## Definition of Critical Terms:

Technical Skills Standards: all non-academic criteria used for admission to and/or participation in a program, which may include physical requirements if they are established as essential to completion of the program or course and that are applied to all applicants (Scott, 1997)

Allied Dental Health Education Programs: general term to describe dental auxiliary Certificate (PSAV) and Associate of Science Degree technical training programs that include, but are not limited to assisting, dental hygiene to dental, and dental lab technology (BCC Catalog, 2001).

Individual with a disability: A person, who has a physical or mental impairment

that substantially limits a major life activity, has a record or history of such impairment or is regarded as having such an impairment (Section 504, Subpart A of ADA; Scott, 1997).

American Disabilities Act (ADA – Pl101-366): civil rights legislation that ensured equal rights to over 49 million individuals with disabilities (Scott, 1997).

Section 504 of (1973) Vocational Rehabilitation Act (29 USCA Sec. 794): disability related legislation that was actually a precursor to the ADA and states that "No otherwise qualified individual with disabilities in the United States shall solely by reason of his/her disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance" (Scott, 1997, p. 10).

Qualified Person: Title II of the ADA (28 CFR 35.104) states, "An individual with a disability who with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipts of services or the participation in programs or activities provided by a public entity" (Scott, 1997, p. 15).

Reasonable Accommodations: concept to describe the means or actions used to achieve equalization for people with disabilities in terms of education, employment and access to public services and facilities. "The compliance standards under both Section 504 Part 104.44 (d)(l) and the ADA (and their implementing regulations) require an institution to take such steps as are necessary to ensure that an individual with a disability

is not denied the opportunity to benefit from or participate in the institution's programs" (Scott, 1997, p. 55).

## REVIEW OF THE LITERATURE :

Although it is true, qualified students cannot be denied participation in a postsecondary educational training program solely because of their disability; the important issue is that the chosen program of study be available to those for whom it is appropriate to insure student success. This view can be interpreted and supported in the literature from many perspectives.

In the 1990's, as a result of increased advocacy, research, and several major federal laws, more attention has been focused on efforts to provide qualified students and applicants with disabilities nondiscriminatory access to higher education (Kerka, 1998). Today, the literature states that there are more students with documented disabilities in higher education than ever before — 140,142 freshmen reported having a disability in 1996 (Thomas, 1992).

The **American Disabilities Act (ADA)** was signed into law by President George Bush in July 1990 and is recognized as "a significant and wide-reaching piece of civil rights legislation that prohibits colleges and universities, as well as other public and private entities, from discriminating against individuals with disabilities" (Scott, 1997, p.7). More specifically, **Section 504 of the Rehabilitation Act of 1973**, a precursor to the ADA, served to establish many of the requirements and procedures for institutions of higher education in providing an equal opportunity for individuals with disabilities. It states that, "no otherwise qualified handicapped individual . . . shall, solely by reason of his handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance" (Griffin, 1982, p. 22). Recent litigation indicates that interpretation of this

part of the statute is not program specific. In fact, Griffin's article, *Legal Issues Surrounding Section 504*, confirms with citations of several court rulings, that the broad intent of the law means that colleges and universities receiving federal financial assistance for *any* of their programs or activities, are required to make *all* programs accessible to handicapped students and to insure that qualified handicapped persons are not inadvertently excluded from such programs by the absence of auxiliary aids (1982). In her book, *Educating College Students with Disabilities*, Sally Scott explains that federal financial assistance has even been clarified as including student financial aid (*Grove City College v. Bell, 1984*). Hence, review of the literature reveals that few federally financed public institutions of higher learning are exempt from the mandates of Section 504.

In addition, "On July 26, 1994, the **Americans With Disabilities Act (ADA)** became applicable to businesses with as few as 15 employees", so now more than ever, employers have become concerned with their legal obligations (and rights) under ADA, (Brodwin, 1994, p. 53). Why? Because it is reported, "In the United States, one in six workers have some form of disability. People who are disabled have difficulty performing certain functions, such as seeing, hearing, talking, walking, climbing stairs, or lifting and carrying" (Career World, 2000, p. 2). So many disabled individuals are returning to colleges and universities as a new resource to help them obtain a new career or job. "The ADA specifies only that the person with a disability be "qualified" (42 U.S.C. Section 12112) – that is the person must be able to meet the essential eligibility requirements of a program, with or without reasonable accommodation, in spite of restrictions imposed by the disability" (Thomas, 1992, p. 252).

Although "few new requirements are mandated of institutions of higher education, the ADA's extension of nondiscrimination mandates to public and private licensure or certification programs and to the employment sector is of significance to college faculty. The law provides the assurance that accommodations and academic adjustments required in the college programs will also be available to individuals with disabilities during licensing and certification exams (Title, Sec. 35.130 and Title III, Sec.36.309) and after college graduation in the employment sector" (Scott, 1997). These broad legal interpretations regarding "access assurances" serve to address the concerns that college programs and any "reasonable accommodations" required to perform the essential functions of the job, are actually a part of preparing individuals with disabilities for employment in the "real world" (Scott, 1997, p. 17). Overwhelming amounts of research indicate that a college education brings improved employment opportunities for graduates with disabilities. However, as with all students, those with disabilities must take their strengths and weaknesses, including the limitations of their disability into account when making career decisions (Friehe, 1996).

The need for identified **industry-based skill standards** that are founded on performance competencies and certification criteria, whether implied or expressed in writing, are not new. Educators at the post-secondary level have used them in career training programs for years to ensure a skilled work force (Wills, 1995). In fact, according to the National Health Care Skill Standards Project published in 1995, these are classically the statements that are used in allied health care training curriculums to answer the question, "What does a worker need to know and be able to do to contribute to the safe and effective delivery of health care?" (Far West Laboratory, 1995, p. 1). In light of recent

legislative initiatives, like Section 504 of the Vocational Rehabilitation Act of 1973 and the ADA (1990), however, the need to communicate these essential skill requirements for all students and applicants has taken on a new focus in terms of compliance with federal law.

In reviewing the literature, by definition, the term "**Technical Skills Standards**" in health career education refers to those "essential functions" or specific skills required of students in training to perform a specific job or activity (Scott, 1997, p. 18). According to Scott's article, in legal context they are defined as "all non-academic criteria that are essential to participate in the program in question (34 CFR, Part 104, Appendix A, paragraph [5]". They are those qualification standards, other than academic requirements like GPA's or SAT scores, that may include but are not limited to

> "personal and professional attributes, skills, experiences, education, physical, medical safety requirements that an individual must meet in order to be eligible for admission to the institution and program as well as the desired professional field of practice" (Scott, 1997, p. 56).

In general, it is found that most literary journals and publications of occupational training programs commonly address the more popular learning disabilities (LD) and the impact of Federal regulations on implementing educational strategies to manage and support students with disorders of certain "learning processes" (Kerka, 1998). Even more limited research has been conducted on the range and scope of institutional responsibility to individuals with disabilities in technical or professional career training programs that involve acquiring clinical abilities and laboratory skills within a specific job-training curriculum, like dental schools or dental health educational training of auxiliaries.

It was found while researching this topic online, only one document, the *Journal of Dental Education*, 62, (5): 387-90, 1998, published by the American Association of Dental Schools was written to address technical skill standards for dental career training. The article states its purpose is to be used by Schools of Dentistry as a reference tool or starting point in developing their own institutional or program specific technical standards. The objective was "to assist dental schools as they respond to the legal requirements of the Americans Disabilities Act and Section 504 of the Rehabilitation Act of 1973" (American Association of Dental Schools, 1998, p. 387). Follow–up research of technical (skill) standards for dental education programs, via the Web, provided very few examples of dental school admissions information sites that appeared to have undertaken the task of developing or publishing the technical skill standards for their dental career training programs. Of the hundreds of dental schools nationwide, only Indiana University School of Dentistry, University of Tennessee, Memphis, College of Dentistry, Louisiana State University Medical Center, and Virginia Commonwealth University School of Dentistry and the University of Alaska, Dental Hygiene Program were identified using the term "Technical Skills Standards" as a descriptor.

Additional time was spent investigating allied dental health education program websites a to see if any performance or technical skill standards were outlined for existing training programs for ancillary dental professions. It is presumed, based on the lack of information found, that allied dental health educational programs, such as dental hygiene, dental assisting, and dental lab technology, unless affiliated with a larger university dental school had not addressed this issue as part of their program or admissions information. This is surprising in light of the fact that there are, within the

clinical practice of dentistry, certain minimal technical standards that are considered requisite to the provision of safe and effective dental treatment for clinical patients, as stated in previous discussion of the article by the American Association of Dental Schools, 1998.

**PROJECT INTENT:**

Therefore, this study sought to address this issue by examining the use of technical skill standards in the admissions process of students in all twenty-six (26) institutions offering accredited allied dental health education programs in the State of Florida, as reported by the administrators and faculty employed in these programs. The targeted institutions for this project offer one or more disciplines as part of their Certificate, also termed Post Secondary Adult Vocational (PSAV) and Associate Degree programs, totally 17 Dental Assisting, 15 Dental Hygiene, and 4 Dental Laboratory Technology programs, statewide.

Based on past and present research, this appears to be the first time that the issue of Technical Skills Standards and their use in allied dental health education program admissions has been addressed in Florida. So, the data collected will be pertinent to this sample of respondent, and the programs they are affiliated with statewide.

## RESEARCH METHODODOLOGY:

This research project's objective was to examine the status of technical skill standards in the admissions process of all twenty-six (26) institutions offering accredited allied dental health education programs in the State of Florida. Data as reported by statewide administrators and faculty currently employed in these programs was gathered, via a survey questionnaire, and analyzed using SPSS computer software.

The survey instrument used was distributed to respondents present at a two-day conference for Florida Allied Dental Health Educators in Ft. Pierce, Florida. Any institutions with faculty not present at the meeting were mailed, or faxed, a cover letter and survey to be completed and mailed in a stamped, pre-addressed envelope by the specified date, within two weeks after the conference.

Specific program admissions information was investigated related to respondent's knowledge of the current use of Technical Skills Standards at their institution.

Participant's knowledge of the Americans with Disabilities Act and its impact on the admissions process were also questioned. There was opportunity for respondents to give specific explanations of issues and incidences they feel are relevant to their individual answers. The opinion of participants in the survey regarding the need for uniform Technical Skills Standards and who should develop and establish them was solicited. Lastly, questions in the last section of the survey addressed demographics of the participants and their programs; age and highest level of education; current employment status; years involved in the dental field; current membership status in a Professional Organization; and type of degree program and clinical affiliates the participants are involved in.

The definition of the term *Technical Skills Standards* used throughout the project is based on terminology found in the resources used in the initial development of this project, which were discussed earlier.

## Setting:

At the Annual Florida Dental Allied Health Educators Conference in Fort Pierce, FL, pertinent data for this exploratory research was collected utilizing a researcher-generated survey questionnaire administered to those allied dental health educators in attendance (n=75). There are *thirty-six* accredited allied dental health education programs within the State of Florida and according to the pre-registration roster; a good representation of statewide program educators had pre-paid to attend the two-day meeting. The respondents were asked to complete the survey and to submit their responses at the closing session joint meeting for all discipline members on the last day

of the conference. As an alternative method of submitting responses, the participants were given the option of faxing or mailing the document to the researcher within a week following the meeting.

## Sample:

The small size of the sample used for the survey cold have possible bias on the results. The objective was to reach the whole population of Florida Allied Dental Health educators, but the researcher did not achieve that goal. Nevertheless, based on convenience, location, and timing of the Florida Allied Dental Health Educators Conference, the opportunity to have a captive audience of dedicated, discipline experts gathered at the same time to help attain a good response rate seemed to be a reasonable choice. In addition, the effort made by those to attend the annual Educator's conference and to maintain membership in this statewide professional organization indicated qualities exhibited by professionals in their field.

Based on an acquired copy of the registered members in attendance from all three disciplines, dental hygiene, dental assisting, and dental lab technology, any institutions with faculty not present at the meeting were noted and mailed or faxed a survey to be completed within two weeks after the meeting date. The self-addressed survey, cover letter, and stamped pre-addressed envelope were mailed to the program directors of the schools not represented at the conference (n=12). Participation by respondents was completely voluntary and return of the survey was considered consent to participate.

## Survey Procedure:

Utilizing project objectives and research questions, the researcher developed a survey questionnaire and cover letter, for distribution to the project sample. The goal was to collect pertinent information on Technical Skills Standards and their use in the admissions process of statewide programs, respondents' knowledge of the Americans With Disabilities Act, and characteristic respondent demographical data.

The three-part, 29-item format of the survey questionnaire contained predominantly closed-ended questions throughout, with one response chosen by the participant. However, some explanation items were requested to allow participants opportunity to clarify their "yes/no" responses with program specifics. A Likert Scale indicating level of agreement regarding specific statements given was used in the opinion-based section of the survey.

## Data/Statistical Analysis:

Data from completed questionnaires was entered into the SPSS program 9.0 Student Version for Windows for frequency analysis of all survey items. The analysis included results of the (1) response rate, (2) frequency of data associated with the specific objectives and questions outlined as the purpose for the study, and (3) relevant descriptive demographics that will support and establish rationale for the selected sampling for the project as well as the researcher question format used. Statistical values were calculated and are presented as tables and graphs used to integrated data into the narrative of this report.

## Results:

The data collected on completed questionnaires in this research project disclosed the extent that declared Technical Skills Standards, referring to the essential, non-academic abilities or requirements needed to perform the job, are being used in the admissions process and counseling of program applicants for statewide allied dental education programs in Florida is small compared to the total number of programs. In addition, most experts employed in these statewide programs revealed the extent of their knowledge with the Americans With Disabilities Act (ADA) to be "somewhat familiar" to "thoroughly familiar" with the law. However, the extent of their knowledge of its impact on admissions policies and procedures was a bit more limited.

Results indicate a sizeable segment of those surveyed feel there is need for uniform, published Technical Skills Standards and a varied perception on who should be responsible for establishing these standards. This outcome may signify the respondents' opinion that a committee would be appropriate for this purpose.

Of the ninety-seven (97) surveys that were distributed or mailed to respondents, forty-seven (47) were completed and returned, resulting in a 48% (percent) overall response rate. Interestingly, however, of the seventy-five (75) distributed surveys to educators in attendance at the statewide conference, only thirty-six (36) questionnaires were returned resulting in a 48% rate of return with this "in-person" form of distribution. Eleven (11) of the twelve (12) surveys mailed to program directors of those schools with no faculty present at the conference, were completed and returned with a higher response rate of 92%.

**Research Question #1 -** What is the status and current use of Technical

Skill Standards in the admissions process of accredited allied dental health education programs throughout Florida?

Section One of the survey questionnaire pertained to interpretation of the Survey Information on the current existence and use of Technical Skills Standards in program admissions. The first question on the survey asked respondents if, to their knowledge, there were Technical Skills Standards currently being used as part of their program's admissions process. Questions 2 - 6 that followed were designed to address specifics about the status and application of those "existing" Technical Skills Standards, if the respondent answered, "yes" to this first question.

Responses to Question 1, on the survey revealed that very few allied dental health education programs in Florida currently have established Technical Skills Standards that they are using as part of their admissions process. All 47 of the respondents completed this question and were the basis for the data analysis and this background information. However, specific numbers of individuals reporting from each of the 26 statewide programs was not identified. No additional information on which programs the respondents were representing was collected. *Figure 1* (below) shows the prevalence of "Yes vs. No" responses from those surveyed.

| RESPONSES | Frequency (#) | Valid % |
|---|---|---|
| *1 - No* | *31* | *66%* |
| *2- I Don't Know* | *6* | *13%* |
| *3 -YES* | *10* | *21%* |
| | *N= 47* | *100%* |

Respondents whose programs have established technical skills Standards that are used in the admissions process to their programs.

Of those 21% who answered "yes" to this initial question, Question 2, addressing the **evaluation of program Technical Skills Standards** resulted in an even split with regard to the participants responses. About half (50%) in Question 2 reported evaluation of the Technical Skill Standards in their programs was done every one to two years, with sixty percent (60%) in Question 3, claiming they had revised their Technical Skills Standards at their institution within the last one to two years. In contrast, the other 50% of the "Yes" respondents in Question 1, claim evaluation and revision of the existing

standards had not been done in over 5 years time (30%). One respondent checked "Never revised" as an answer in Question 3.

Question 4 of the survey, revealed Program Directors (10/10), Program Faculty (4/10), and Clinic Dentists (2/10) and Clinical Instructors (2/10) were most commonly noted as being involved in the development and revision process of existing Technical Standards. Of the schools reporting to have established Technical Skills Standards in place, a vast majority (90%) also indicated that these Standards were published. Of those reporting published standards, 70% appeared in the Program Admission Application Packets. A Program brochure, the School Catalog, and the program Website were also reported as sources for written standards by at least one respondent.

In Question 6, Compliance with the Program's Technical Skills Standards were accomplished predominantly through a Physical Exam, by 50% of those claiming to have existing Technical Skills Standards. Consultation or discussion with the Program Administrator prior to admission, evaluation by program personnel of the student's performance or abilities (after admission to the program), student self-reporting, and a manual dexterity test were also reported as currently used compliance measures by one or two of the respondents.

All respondents addressed issues in Questions 7 through 11 of Section One gathering Survey Information, because these questions were applicable to any of the programs regardless of whether they had existing Technical Skills Standards or not. These questions addressed the requirement of documentation and reporting of personal and health characteristics for incoming students to these programs. Those surveyed were asked to check all that apply and give brief responses to clarify answers as needed.

Respondents in Question 7, ranked Immunization Records (32%) and Physical Exam and Health Records (36%) as the most common requirements for student admission to an allied dental health education program, resulting in a combined rate of 68% participants claiming their programs require these conventional medical records. Also reported as required, by the respondents in Question 6, were Communicable disease history (22%), initial drug/toxicology screening (5%), and 4% who cited "Other" specific requirements, such as Hepatitis B status, a Physician's release statement and a criminal (felony) record, as commonly used. In addition, the responses in Question 8 appeared to be evenly split at twenty percent (20%) for each, Visual Acuity and Hearing, as conditions that specifically require verification and documentation from a physician for incoming students. Surprisingly, however, 32% (25 of the 79 total responses) had no items checked when asked the question of conditions needing a physician's verification for entry to their programs. Only five responses were checked for a History of Back Problems (6%), four were checked for Gross/Fine muscular movement (5%) and three (4%) checked the Ability to Communicate effectively in English.

It appears, in Question 9, few students question the applicability of the information asked on the Physical Exam/Health Record forms, as most respondents (81%) claim that no formal or informal complaints had been made to their programs regarding the questioning of health issues. The few "yes" responses that gave an explanation cited informal complaints by students regarding the insurance of confidentiality of personal information as the topic of concern. The necessity to accommodate a disabled student does warrant documentation of the disability, said 79%

of those responding to Question 10, with Learning disabilities most commonly specified, followed by Physical Disabilities.

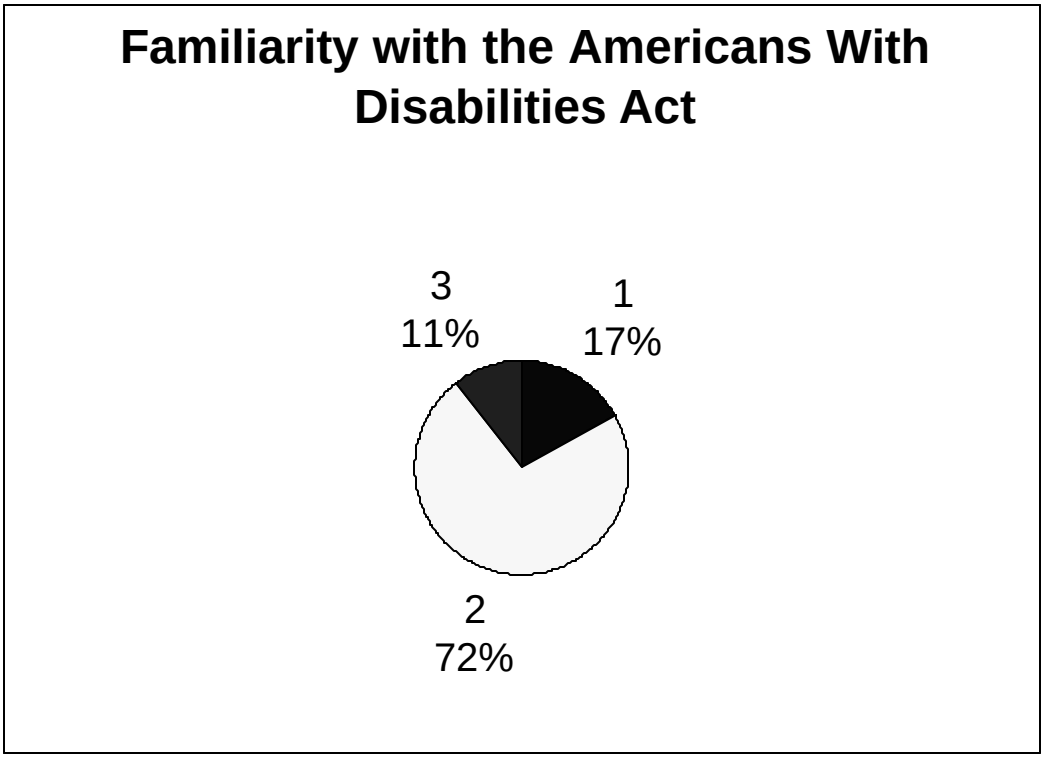
In Question 11, forty percent (40%) of the respondents who stated "yes", when asked if their program has had to make accommodations for a physically disabled student, specified use of modifications associated with Learning Disabilities, such as requiring note taking services, tape recording lectures, altering testing environments, and tutoring as the most common. Other specifics noted in Question 11, pertained to Hearing and Visual impairment services. Amazingly, of the other 60% responding to Question 11, most reported, "No" accommodations had been made (by their program) for any physically disabled student. Only one respondent noted their program was designed physically to accommodate wheelchair access for disabled students.

**Research Question #2 –**What is the current knowledge of discipline experts in the field of the Federal statute, the Americans With Disabilities Act of 1990 and its impact on the admissions process of their programs?

Survey responses to Questions 12 and 13 are shown graphically in Table 2 with most of the respondents (72%) stating they are "somewhat familiar" with the Americans With Disabilities Act (ADA). When added to the 17% of those responding that they are "thoroughly familiar" with this legislation, it would seem safe to say that a majority of the total survey participants (89%) feel to some degree familiar with this federal law. As shown in **Figure 2,** below, only five respondents or 11% admittedly were not familiar with the Americans With Disabilities Act enacted in 1990.

Figure 2

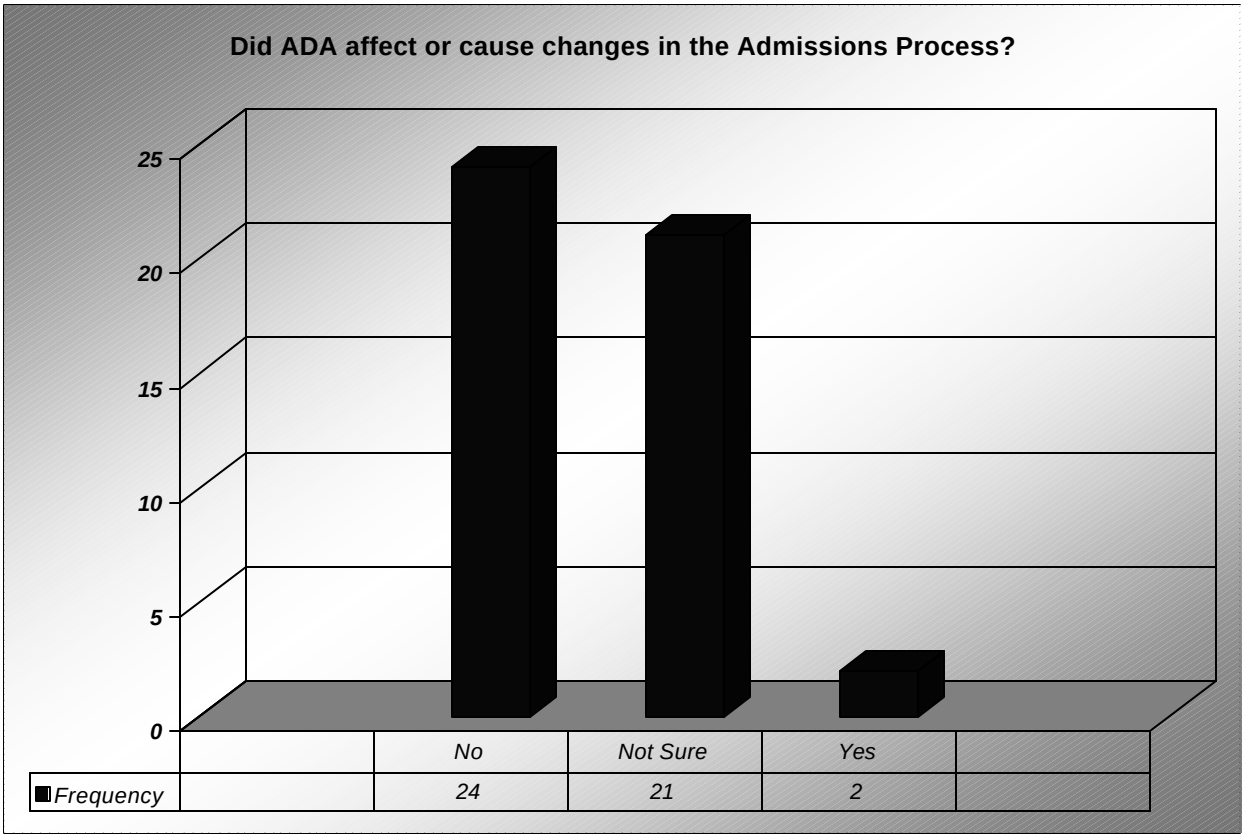
1 = Thoroughly Familiar 2= Somewhat Familiar 3= Not Familiar




Furthermore, when asked in Question 13 if enactment of the ADA affected or caused changes in the program regarding admissions or the use of Technical Skills Standards, over half (51%) said "No", with another 45% responding with "Not Sure". The two (2) "yes" responses did specify that the impact of the ADA resulted in changes regarding documentation (of disabilities) and the publishing of general areas of performance in their program. This would seem to indicate a positive step taken by those "yes" respondent's programs in avoiding complaints of violations of federal Civil Rights Law that ensures equal opportunity for people with disabilities. **Figure 3** below illustrates, to most respondent's knowledge, the ADA and its legal foundation for faculty and colleges to provide access for students with disabilities has had little or no impact on the admissions

process of most programs.

## FIGURE 3




**Impact of the ADA on Admissions Policies & Procedures (Survey Question # 13)**

**Research Question #3 -** Should there be uniform technical Standards and, who should establish these technical standards?

Section Two of the survey questionnaire required opinion responses by those surveyed. Respondents were asked to indicate their level of agreement with the need for

uniform, published Technical Skills Standards for each of the three dental health education disciplines; dental hygiene, dental assisting and dental lab technology. Consistently, based on Questions 14 through 17, the majority of respondents, from 47% to 49%, "Agreed" to "Strongly Agreed" with the need for uniform Technical Skills Standards in each of the three discipline areas. Sixty-two percent (62%) of the survey respondents expressed "Agreement" in the need for published Technical Skills Standards to be available for all Florida allied dental health program applicants.

## FIGURE 4

**a. The Need for Uniform Technical skills Standards for each allied dental health discipline**

Strongly Agree= 5 Agree= 4 Neutral= 3 Disagree= 2 Strongly Disagree= 1

No Response = NR

| Technical Skills Standards | N | 5 (%) | 4 (%) | 3 (%) | 2 (%) | 1 (%) | NR (%) |
|---|---|---|---|---|---|---|---|
| There should be *uniform* for all **Dental Hygiene** Programs in Florida | 47 | 29.8 | 17.0 | 21.3 | 12.8 | 14.9 | 4.3 |
| There should be *uniform* Technical Skills Standards for all **Dental Assisting** Programs in Florida | 47 | 29.8 | 19.1 | 23.4 | 14.9 | 12.8 | 0 |
| There should be *uniform* Technical Skills Standards for all **Dental Lab Technology** programs in Florida | 47 | 27.7 | 17.0 | 25.5 | 14.9 | 12.8 | 2.1 |
| There should be ***published*** Technical Skills Standards For all applicants to Florida Dental Allied Dental Health Education Programs | 47 | 36.2 | 25.5 | 12.8 | 6.4 | 19.1 | 0 |

**(Survey Questions # 14 - # 17)**

# FIGURE 5

**The person(s) who should establish Technical Skills Standards for the program**

| Strongly Agree= 5 Agree= 4 Neutral= 3 Disagree= 2 Strongly Disagree= 1 | | | | | | |
|---|---|---|---|---|---|---|
| N = 47 | 5 (%) | 4 (%) | 3 (%) | 2 (%) | 1 (%) | NR (%) |
| Educators | 61.7 | 12.8 | 2.1 | 4.3 | 12.8 | 6.4 |
| Institutional Administrators | 14.9 | 14.9 | 27.7 | 8.5 | 19.1 | 14.9 |
| Statewide Discipline Committees | 8.5 | 27.7 | 23.4 | 8.5 | 14.9 | 17 |
| Practitioners (in the field) | 14.9 | 27.7 | 19.1 | 6.4 | 14.9 | 17 |
| Professional Organizations | 14.9 | 19.1 | 19.1 | 10.6 | 12.8 | 23.4 |

**(Survey Questions #18 - # 22)**

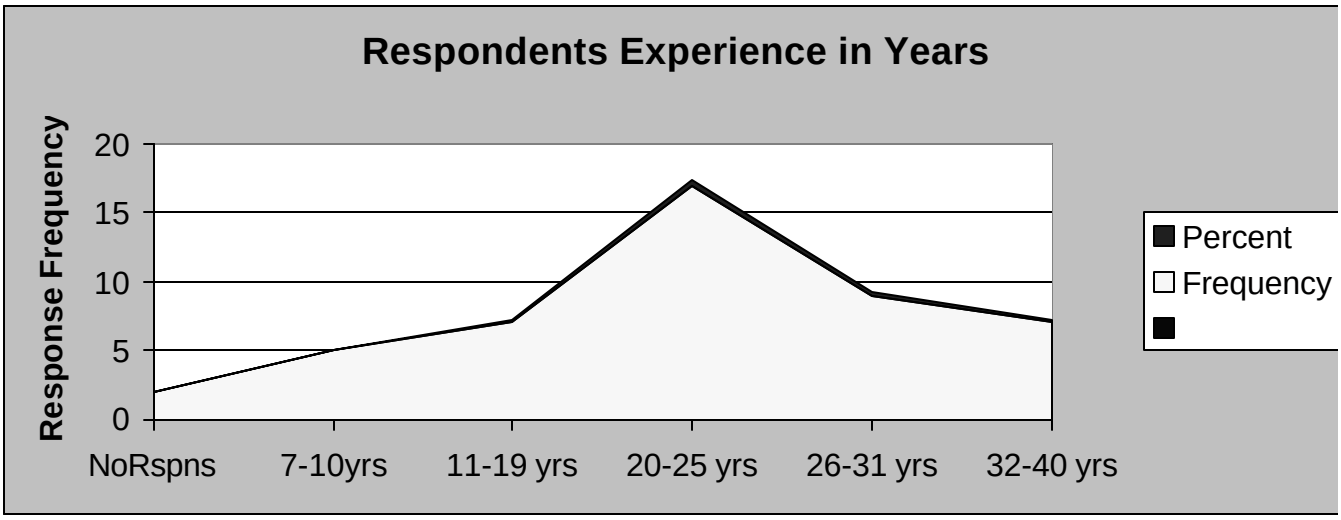
**Figure 5** data indicates the respondents' opinion in percentage form regarding "**who** the person or persons should be that establishes Technical Skills Standards for a discipline or program". It appears approximately 74% of those surveyed favored Educators. Combining percentages for the "Agree" to "Strongly Agree" responses, the perception is that Educators are in high regard, followed by Practitioners (in the field) at 42% and Statewide Discipline Committees (36%). **No opinion** was indicated for some responses, with the highest percentage occurring in the category of Professional Organizations (23%). In addition, dissention was possibly indicated by the respondents for Institutional Administrators, with 43% (combining percentages for choosing 1 or 2) of

the respondents indicating they “Strongly Disagree” or “Disagree” with School Administrators establishing Technical Skills Standards for programs.

## Demographics:

The Final Section of the survey questionnaire addressed participant and program demographics, in Questions 23 through 29. Demographic characteristics of the sample indicated that the majority of respondents ranged in age from 35 to 54 years of age, with 59% falling within the 45 – 54 year range. Most of those completing the survey, Question 24, indicated educational backgrounds at Masters Degree (51%), PhD (4%), or DDS/DMD (13%) levels, with a combined percentage of 68% of respondents having advanced degrees. Question 25 results indicated a broad range in years of involvement in the dental field ranged from seven (7) to forty (40). A large bulk of respondents, approximately 36%, was statistically shown falling between twenty (20) and twenty-five (25) years in the dentistry. **Figure *6*** graphically shows that the resulting data and the many years of involvement the respondents have in the educational training of allied health students, nearly a quarter of a century or more for some. This would certainly indicated a positive characteristic in qualifying their expertise in the field.

## FIGURE 6




**(Survey Question # 25)**

There was a high positive response to Question 26 regarding professional organizational membership at the local, state and national level by 81% of respondents. Due to the close-ended nature of the question posed, little is learned about the actual involvement of the individual, like holding office, or committee appointments. However, the results still indicate an important characteristic of experts in the field in terms of their interest in and support for professional career growth and service.

When questioned about current employment, the majority of survey participants answering this question (N=40) reported working full time (87%), with 13% working part-time. Of that number, 64% were Educator/Instructors, 27% were Program Administrators/Staff and only 9% were working as a Clinical Instructor Only. In Question 26, those surveyed were instructed to "mark all that apply", so some individuals marked more than one item when responding to this question, resulting in N=85 of total responses.

Because there are no four-year, baccalaureate degree dental hygiene, dental assisting, or dental lab technology programs in the State of Florida, only two choices were offered respondents, in Question 28, as descriptors for their educational programs. In some instances, questionnaire respondents marked both categories because Florida has unique articulated programs at some institutions creating a ladder concept between Dental Assisting and Dental Hygiene at the same institution. Still, most of the educational programs, 65%, reported to be Associate in Science or Associate in Applied Science (A.S./A.A.S) programs for Question 28. The other 35% reported Vocational/Technical Certificate (PSAV) status for that question.

When asked about program off-site clinical affiliates, the interest was in a possible correlation between those programs that have addressed the use of performance-based, Technical Skills Standards in their admissions process and the need to comply with program externship requirements in the field. It was thought the potential for more stringent compliance with federal mandates would presumably be more likely at military facilities and public health sites. As reported in Question 29, most clinical sites appear to be at Public Health Facilities, Private Practice Offices, and Military Bases (40%, 32%, 12% respectively). The data supplied in an open-ended format for this question also indicated other options given by nine respondents, as the University of Florida College of Dentistry, Veterans Administration and Children's Hospitals, Homeless Shelters, and Retired Citizens Centers that were externship affiliates. Certainly availability of externship sites is an issue for some institutions, as 5% of those completing Question 29, marked the option that their "program does not have off-site clinical affiliates".

## Conclusions and Recommendations:

This project was the **first time** attempt to investigate the existence and use of Technical Skills Standards (referring to those essential, non-academic skill abilities needed to perform the job) in advisement for students as part of the admissions process to allied dental education programs in the state of Florida. A result that 66% of the respondents in this project disclosed that they have **no** established Technical Skills Standards that are used in their counseling or admissions process confirms there is a need to examine this issue. The resultant question then becomes, should we have uniform Technical Skills Standards for each allied dental health program and should the uniformity be within the state, the country, or among school programs? Respondents indicated that they feel there is a need for uniform, published program technical skills standards for their disciplines, and that they have varied opinions on who should establish these standards. That, in itself, offers additional questions for further research and investigation.

The sample used for this research was determined by the convenience, timing, and cost-effectiveness of surveying those devoted dental health educators attending the Florida Allied Dental Health Educators conference. It seemed reasonable, too, that a face-to-face encounter with that number of expert respondents gathered in one place at the same time for the purpose of discussing statewide issues would insure a better response rate than a mailed survey. But this was not the case. The response rate was actually higher for the follow-up mailing to those not in attendance at the conference (92%) versus the distribution of the surveys at the conference. That return rate was 48%, to the

surprise of the researcher. It was odd that the "captive" audience at the meeting responded at a lesser rate than the mailed questionnaires. In the end, because of the limited sample size, the deductions and conclusions derived from the sample information will predominantly remain only pertinent to the sample of participants and their programs here in Florida.

The data collected on what is currently required of incoming students to these dental programs is significant. It confirms in Section One of the survey, Questions 7 and 8, that our priorities are still focused on documentation of Immunization status (36%) and sensory issues, like visual acuity (20%), hearing impairment (20%), and general Physical Exam and Health (32%) issues. In contrast, the low percentages of reported documentation, in Question 8, required for a History of back problems by only 6% of those responding; Gross/fine muscular movement at only 5% of those responding, and the Ability to Communicate effectively in English by only 4% of the respondents represent a lack of awareness of conditions significant to student success in allied dental health professions.

With regard to student complaints of personal or health information requirements to dental health training programs, respondents to survey Question 9, reported that in only a few isolated incidences (8%) did students informally question the applicability of the Physical or Health information requested. In most instances, 81%, the respondents indicated students accepted the relevance of the required information, and perceived the personal or health characteristics as a necessary part of the admissions process. This is relevant because some conditions that may require documentation if used to evaluated a student's qualifications for admission to a program, may not be upheld in the courts when

dealing with students with disabilities. It would seem appropriate for all students to have prior knowledge of Technical Skills Standards (essential functions of the job) provided to them as part of that information-based admissions process. As far back as 1981, Ross and O'Brien's article reaffirmed this need in the statement, "Allied health education at the associate degree level has a greater need for technical standards since educational programs in allied health have substantial performance components which all students must be able to demonstrate in order to successfully complete a program of study" (p. 7).

Certainly a review of the literature confirms that today, "there are more students with documented disabilities in higher education than ever before" (Thomas, 1992, p. 248). Data gathered in this research project also confirms an awareness of this by post-secondary, allied dental health career training programs in Florida. With the reported 79% of participants claiming, in survey Question 10, that their programs ask for formal documentation of the students Learning and/or Physical disabilities, this shows that programs are attentive to the growth in the number of students with disabilities in recent years. In contrast, Question 11, revealed only 40% of the respondents' reported their programs have had to make accommodations for a physically disabled student. Most of those accommodations were associated with Learning Disabilities, followed by sensory (hearing and visual) impairment services. This trend may be explained in part by the prevalence of adults with documented learning disabilities as a result of increased research in that area (Kerka, 1998). Surprisingly, 59% responding to Question 11 reported "No" accommodations have had to be made by their program for any physically disabled student. Six percent failed to respond to this question so, for the sake of argument, these are assumed to be "no" responses.

The data reveals that it most of our statewide programs may be relying on their own "good faith" interpretations of how to address the issue of insuring that no applicant is discriminated against with regard to admissions into Florida allied dental health education programs. Based on current legislation and civil rights laws, an abundance of recent litigation proves that very little latitude is given when addressing denial of what is considered "reasonable accommodation" for a physically disabled student (Griffin, 1992, p. 23). *Legal Issues Surrounding Section 504*, citing several court rulings, confirms the broad intent of the law means that colleges and universities receiving federal financial assistance for *any* of their programs or activities, are required to make *all* programs accessible to handicapped students and to insure that qualified handicapped persons are not inadvertently excluded from such programs by the absence of auxiliary aids (Griffin, 1982).

The original intent of this project was to initiate further discussion and research regarding Americans with disabilities and specifically, Florida's allied dental health education programs' role in this critical area. This data reveals that a very few programs and institutions have seen the need or taken the initiative to address this issue already.

Lastly, the data reveals that statewide allied dental health educators feel there is a need for uniform, published Technical Skills Standards in Dental Hygiene, Dental Assisting and Dental Lab Technology (47%, 49%, 45% respectively) a finding that supports the literature suggesting that "as a result of . . . several major federal laws, more attention has been focused on efforts to provide qualified students and applicants with disabilities nondiscriminatory access to higher education (Kerka, 1998) . In addition, the literature states "As the number of students and applicants seeking to attend institutions

of higher education increases, colleges and universities can expect to see even more individuals with disabilities applying for admission (Scott, 1997, p.15). The results from survey Questions 18 –22, seem to indicate, respondents were not only positively in favor of the fact that there should be Technical Skills Standards established and published, but the majority either "Agreed" or "Strongly Agreed" that Educators (61%), or %), Practitioners (in the field) at 43% or Statewide Discipline Committees (36%) should be the ones to establish these Technical Skills Standards for all allied dental health educational programs.

## Recommendations:

Overall, this research project accomplished its objectives which were to determine 1) if there are technical skills standards that currently exist for the accredited dental hygiene, dental assisting and/or dental laboratory technology education programs established in the State of Florida; 2) the degree of familiarity of educators (as experts in the field) regarding the Americans with Disabilities Act (ADA); and 3) summarize opinions of educators, as experts in the field, regarding the need for uniform, published technical skills standards for each specific institution and each educational program discipline and who should establish these technical standards.

Although useful in describing characteristics and demographics of the probability sample for this project, inherent problems with validity and formatting of the questions on a "researcher developed" survey will surely result in some ambiguity and misrepresentation of data from the respondents. For example, some questions may not address a topic in enough depth and specificity to elicit the information needed. Attempt

was made to limit researcher bias and personal prejudice in interpreting the data elicited from the survey questions by the use of closed-ended questions. However, wherever additional explanation or specific notations were made, the researcher's interpretation may have affected the input of data, ultimately the outcome of the findings and conclusions.

The results attained in this project reflect the researcher's attempt to overcome any internal and external validity factors. However, it is recommended that additional studies be done to address items in question or in need of more specific dialogue. For example, careful analysis of the provisions set forth by the American's With Disabilities Act of 1990 and their applicability to each programmatic admissions policies and procedures would be appropriate.

This study has some limitations in its generalizability to all allied health education programs, nationwide, based on the convenience sample used. However, the data analysis and findings discussed earlier indicate this project could be used as a Pilot Study with which further research could be compared at the state or national level. The results of the survey may also serve as a starting place or reference point for other programs and disciplines, both state and nationwide. It is recommended that a larger population sample be selected in light of achieving a higher response. Although the response rate for subsequent mailings which were done after the initial in-person survey distribution at the conference, were at a high (92%) rate of return versus the 48% return rate at the meeting,. It is recommended to include some type of incentive for respondents to encourage their participation.

Confirmation of the need to examine the admissions process for all allied dental health education programs and to develop essential, non – academic requirements necessary to perform the fundamental job duties for dental hygiene, dental assisting and dental lab technology has been the most positive outcome of this project. "Health care has been one of the nation's fastest growing industries... According to recent reports of the Bureau of Labor and Statistics, with over nine percent of the total workforce is employed in the health care field". (Far West Laboratories FWL), 1995, p. ix). The results of this study provide important information for allied dental health educators in Florida. It is paramount that technical, or pre-baccalaureate, levels of allied health care training such as Associate (A.S.) Degree Dental Hygiene and Dental Lab Technology programs, as well as Vocational (PSAV) Certificate programs like Dental Assisting, are especially aware of this issue because of their unique and vital contribution of providing fundamental training to the entry-level dental health care worker (FWL, 1995, p.5).

This study has merit, even in light of its limitations in generalizability to all dental health education programs, but will hopefully inspire additional interest in this critical area, maybe through replication of this study in other disciplines and allied health education programs. It has successfully established a clear need for more research into the need for essential Technical Skills Standards for those allied dental health education programs without them. Quite possibly, other health care disciplines with performance criteria requirements will also see it as an area of focus to equalize opportunities for all qualified students, practitioners, and employees.

It is recommended, also, that secondary research be conducted on career educators' knowledge of ADA and its effect in performance-based occupational training.

This issue has so many facets; it appears to be rich with the need to expand the knowledge of this select population as well as others in allied health technical training programs. To support this recommendation, the research cites a comparison study of two-year community and technical colleges by McGuire and Bieber where it was found that "as college becomes a realistic goal for increasing numbers of students with learning disabilities, the option of a technical school is one which may be appropriate for some" (1989, p. 8).

The recommendation to take a more global look at the topic of informing potential program applicants of the minimum physical, emotional, and intellectual technical skill standards required to successfully complete an occupational training program has been supported by the expressed interest of these allied dental health respondents and the statewide data collected in this research project.

## Summary:

People with disabilities constitute the single largest minority group identified in the United States, surpassing the elderly and African Americans, according to the U.S. Bureau of the Census statistics (Wells & Hanebrink, 1998). The topic needing to be addressed by educators is not only what types of disabilities in an occupational area can successfully be accommodated with the entry-level worker but what minimal physical requirements or abilities should be identified as required for the applicant to a technical/vocational program to insure student success (Scott, 1997)?

In conclusion, the findings of this project confirm that is important for postsecondary institutions, as well as individual training programs and faculty to comply with the

requirements and spirit of the law, to better meet the needs of students with disabilities.

> "The key to compliance with disability discrimination laws is balancing the rights of disabled individuals with the institution's desire to preserve the dignity of its programs. When essential components are clearly and objectively delineated, a nondiscriminatory standard is established for all students" (Scott, 1997, p. 15).

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# Integrating Public Health and Community Service In your Curriculum

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Involving America's students in community service activities is one of the first objectives that was established by Congress under one of the National Education Goals for the year 2000. Unfortunately, national data on the subject has been sparse in the past.

The 1996 National Household Education Survey provides statistics relating to youths involved in community service. About 50% of $6^{th}$ - $12^{th}$ graders in 1996 reported some type of Community Service and the majority of those students were in schools that encouraged community service. Schools that arranged community service had the highest number of students participating. Further, this survey found those that were more likely to participate in community service were students who:

- received high grades,
- females,
- English was their primary language, and
- were $11^{th}$ or $12^{th}$ graders.

The greater number of activities the student is involved in, the more likely they are to volunteer. Some are unlikely to volunteer unless encouraged or arranged.

Three years later in 1999, the National Center for Education Statistics reported the following:

- 64% of all public schools (elementary, middle, and high), and

- 83% of high schools) had students participating in community service recognized by the school,
- 57% of all public schools organized the community service for their students, and
- 32% of all public schools organized Service Learning for their students.

If we look at just the high school statistics, 50% of high schools reported organized service learning for their students.

What is the difference between community service and service learning? Service learning is defined as "curriculum based community service that integrates classroom instruction with the community service activity." It involves mandatory student participation. Learning objectives and assessment are key to the program. Service learning meets an actual community need and includes a learning component. There is a notion of reciprocity in service leaning that says you have something to learn from the people you serve.

It is difficult to compare these statistics from 1996 and 1999 because one is a household survey of students and the other is a survey of schools. It will be interesting to look at further surveys by NCES to compare the data submitted by schools. This information is accessible via the National Center for Education Statistics home page, (http://www.nces.ed.gov/)

Interest for students involved in some form of community service is on the rise. The November/December issue of Techniques (ACTE Publication) included articles about service learning.

Why integrate Community Service or Service Learning into the health sciences curriculum? What are the benefits?

1. develop leadership skills in students by allowing them to network with other professionals in the community organizations where they may serve.
2. broadens their perspective of other populations and cultures
3. inspire them to take on civic responsibilities later in life.
4. teach them important employment skills that they can use later.

When you think about objectives for implementing a project, consider:

- yourself (the instructor),
- your students, and
- the community organization you plan to serve.

Also of importance:

- What do you, your students, and the organization each hope to gain from this experience?
- Are your goals and objectives in alignment with each other?

The community organization your student will serve may have their own set of goals or objectives for the project. For example, I send students to our local health department to work in the children's dental program. We each have goals for the project that may be different but we work to make them fit. Make sure you communicate well with them and that you are flexible. Your objectives should include changes that will occur in the student's awareness, skills, and knowledge.

So how do you find a project or need in your community? Start by asking friends and co-workers. Also call upon your community leaders and directors of established programs in your community. A list of sample projects is included below.

- Teach a skill or educational program to an elementary or preschool class. (examples, child care and 1st grade)
- Volunteer at a health fair.
- Set up an information booth at the mall.
- Volunteer at a homeless shelter or women's shelter.
- Help out with special needs students.
- Work at the local food pantry.
- Volunteer for Habitat for Humanity.(example)
- Work at a senior citizens center.
- Make or deliver meals on wheels.
- Host a blood drive at your school.
- Get involved in a child abuse prevention program.
- Work with city officials to "clean up" the city.
- Work with local officials to promote safety issues. (BYB)
- Get involved with the local health department (Healthy Beg.)
- Plan a "Make a Difference" day project.

One of the projects with my students is to provide "Dental Health Presentations" to all first graders in the Elkhart Community Schools. We begin planning in January and

offer the presentations during February in conjunction with "National Children's Dental Health Month" (http://www.ada.org/). Our local dental society gives us support by donating toothbrushes when we need them. The schools also get free tooth brushing kits from Crest (http://www.crest.com/index_flash.html) if they order them in time. I coordinate the project with the school nurses. The schools we service love the presentations and we have been featured in their elementary school newsletters. Not only do we fill a community need but we get positive publicity for our program and our school.

Also locally students are placed in a children's dental program with our local health department. We have a full time dental hygienist who runs the program and she is a great role model for the students. This has proven to be a wonderful learning experience for the students. They see many cases that they would never see in a general dental office.

The other project planned and implemented involving two students each year is a "Children's Dental Health Clinic" at a mission in southeastern KY in the Appalachian mountains. This is an economically depressed area of the country with very little dental care available. We work in conjunction with a mission there that has a full time dentist on staff. I take two students who have been chosen by my advisory board from their application and essay. The students assist in all aspects of the care given. We stay at the mission for one week and give care four days of that week. We get donations from many of the dentists where my students go for clinical experience so it really becomes a combined effort in order to make the trip possible. The students have proven to be an invaluable asset to the program in Kentucky. This is strictly a voluntary program and the

students do not receive any type of grade for their work. They do receive recognition for their volunteer service and are able to add this experience to their portfolios.

The format in which community service or service-learning assignments are set up may vary. Make it fit the needs of your students and your style of teaching. It may be a required assignment and the entire class participates or it may be strictly voluntary and you use it as extra credit since not all students may choose to participate. There is another option that I call required “voluntary service”. This means that you give the assignment and all must participate but students may choose which project or area they would like to volunteer. This requires flexibility but allows students to feel more a part of the decision making process.

Finally, include assessment with the assignment. Make sure students know the objectives and how they will be assessed. The assessment process should show a change in behavior in your students. Don't assess just to give a grade or make a report. Do it to help your students learn. Immediate feedback is best for change to occur. Student journal writing before, during, and after the project is one way to assess the outcomes. An in class presentation about the project is another method. Also, the community organization that benefited from the project may evaluate the student. Make a rubric to use. Keep it simple and easy to use with clear definitions.

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**Book review**
**The Human Body in Health and Disease, 9th edition.**

Sharon B. Herman, RN, B.S.N.

1. Accurate?
2. Readable?- that is logical, vocabulary understandable, clarity?
3. Format good?
4. Encourages the learning process?

Is this your check list when considering a textbook for use in your class? I reviewed Memmler's The Human Body in Health and Disease, 9th ed., updated by Barbara Janson Cohen and Dena Lin Wood, and its companion workbook and can check "yes" to each of the above.

Accuracy, of course, has a matter of "degree" to it. Some texts have more facts and details than others, depending on the intended audience. This reference is considered in their own words "an excellent primer to basic anatomy and physiology." In my mind I emphasized "primer" and "basic." Its' form of stating general ideas then expanding to more detail is very effective, yet seems almost too simple in some places. This would not qualify to be medical school required reading but is quite sufficient for all nursing levels through LPN and some chapters are detailed enough for RN studies. Also this could be helpful for many other allied health field studies.

Another aspect of accuracy is the question of whether the source includes updated information. This text does seem to be quite contemporary, with special interest boxes

about such subjects as Prozac, and inclusion in the main body of newer studies about the relation of rheumatoid arthritis and antibody development and the relation of Alzheimer's and the use of hormone, Vitamin E and anti-inflammatories. Such updates serve well to make this revised course book relevant to today's health care.

It is important to communicate accurate facts in a logical, understandable and clear fashion for the student to be able to obtain the information. This authors have done very well on all counts. Te book uses the logical order of discussing the body as the whole and the chemical basis of human life then considers each of the systems or groups of systems in succeeding chapters.

After the initial discussion of the body as a whole, the authors include a general discussion of the disease processes so that in future chapters it becomes easier to follow the discussions of the system then the diseases related to that system. Again this arrangement of information provides a logical grouping that aids the understanding of the disease entities and makes the information more utilizable.

Vocabulary is critical to understanding any writing and this book includes not only a glossary in the back of the book but also defines newly introduced words within the passage themselves. This is a much easier form than books that put the definitions off to the side so that the student must interrupt the flow of reading to check the definition. The only drawback would be for the advanced student who already understands much of the vocabulary and therefore finds these defining sentences unnecessary. However I feel the benefit outweighs this negative. Newly introduced words are also boldfaced for easy notice if the student needs to refer back to these. Clarity is the third criteria I ask of a text's readability. The sentences of this work are short and succinct and therefore clear

instead of so wordy and convoluted as to be difficult. There are clear efforts made to explain the differences between reference books over such things as names of systems and to expand definitions to clarify the common over-simplifications that actually cause misinformation. Again, the going from general information to greater detail within each topic makes the message much clearer. The diagrams are very helpful and contain some of the best I have seen. This is particularly true of the movements of the synovial joints which explains the motions better than any words or drawings I have previously encountered. The drawings of atoms and molecules in three dimensions also give a clearer view than many I have seen in other Allied Health course books. Labels of these drawings are very visible and the colors chosen are excellent in allowing the student to see where the pointer is actually pointing. Furthermore, the summary outlines at the end of each chapter add to the clarity of the content, as well as review the material. All in all I would consider this a very readable textbook for high school, technical institute and college level studies leading to health careers.

The format of the whole book and of each chapter are both useful for the student and encouraging to the learning process along the way. The book itself has colored sections along the sides of the pages for easy finding of sections within the book and the diagrams and drawings are in proximity to the discussion correlated to them so the student can relate the information more readily. The “special interest boxes” are included in pertinent places as well so that the student can seek further information at the point of interest. They increase the use of the textual information and contain either information about normal function, a clinical focus or a health topic. Other aspects of the format, namely the listing of objectives, key terms, bolding and defining new terms, the check

points and the review questions, all add to the encouragement of the student to make the information part of their process. The objectives make it clear to teacher and student what is hoped to be gained from this body of facts. This helps prepare the mind for filing the data in relevant fashion. The key terms and defined new words help the student to find details to master as part of finding understanding. Checkpoint questions are scattered throughout each chapter with answers at the end of the chapter. Some review a major point of the section but others are relatively minor detail so may give the student the wrong message on what should be remembered. Most of them though have very thorough answers for the student to review as they end the chapter. The review questions at the end of the chapter are extremely thorough in covering the material for the chapter and any student who comprehensively answers these will surely be ready for any test to be given.

The study guide which accompanies the textbook is an excellent one and well structured. The questions are of a variety of types- matching, true/false, multiple choice, labeling of diagrams, applications and short essay. The matching questions are in groupings that are not unwieldy. Where there is much information to cover there are more groupings so the material is sufficiently covered. The true/false section requires the student to correct the key phrase if the original was false. The diagrams used for labeling are also shaded for optimum visibility. The short essay questions are the weakest section of questions and could be made more comprehensive and should expect more than a short essay for some of the queries.

Accuracy, readability, good formatting and encouraging of the learning process make this textbook one which I could easily recommend to be used in health career studies for the basic knowledge of anatomy and physiology so relevant to undergird

understanding for those roles providing for care of persons in health and with disease.

Consider it for your next update.

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# Workforce Performance – A Pragmatic View

Jo Ann M. Whiteman

## Abstract

The purpose of this article is to focus on an ever-changing workforce and what is needed from schools to enhance the performance of the 21st Century workforce.

## Workforce Needs

Employers have looked to postsecondary schools as a source of trained workers, including graduates of both vocational and general education programs. (Hirshberg, 1991).

The U.S. Census Bureau reports that over half of manufacturers cite the need for a skilled workforce as the most significant barrier to technology adaptation. Gone are the days of the manufacturing industry hiring people straight out of high school. The emergence of a global, technology-driven, skills-based economy has created the need for knowledgeable workers (Thomas & Wagner, 2000).

In Minnesota a report by the Citizens League Committee on Workforce Training urged the legislature to invest more money to improve the skills of current workers and encouraged employers to do the same. The new workforce, in their report, was not capable to understanding the concepts of just-in-time inventory, statistical process control, or computer aided manufacturing. Training the new workforce had become a do or die proposition. Without a labor pool to draw from, a crisis would arise and industry

business would possibly be lost to other states that could provide the human capital needed (Thomas & Wagner, 2000).

In Winston-Salem, North Carolina where the average unemployment rate is under two percent, applicants referred by agencies had a lower than average level of education and job skills and required both basic and technical skill training to be successful employees and to enhance their earning potential. (Johnson, 2000).

## Workforce Development

In a report, *Preparing a Twenty-First Century Work Force: Innovations in Programs and Practices* prepared by David Scott available from the League for Innovation in the Community College there are fifty-four (54) successful and effective community college programs that focus on innovative strategies for meeting current and future workforce developments and requirements. The partnership programs begin with School to College and continue to College to College, and Community Colleges, Businesses and Agencies (Scott, 1997).

The PIC (Private Industry Councils) was established to be instrument of a marketplace that demands more efficient allocation of the labor force. They are generally referred to workforce development boards. Boards of directors are charged with overseeing allocation of job training funds. These boards are made up of a majority of private sector members joined with other leaders, including representatives from community colleges, elementary and secondary education, the employment service, community-based organizations, organized labor and others. Their mission is to develop the skills of the entire workforce in local communities and to ensure a smoothly

functioning local economy. The broad goals for all local workforce programs in its system are based on the specific needs of the business community. The board acts as a broker between employers and service providers – working on projects that are mutually beneficial to all. Some of these projects include One-stop Career Centers where job seekers can find jobs and learn how to qualify for jobs. These centers are (or were in some states) places where employers can find qualified workers and learn about resources to expand their companies and upgrade their workforce. (Knight, 1998).

## The Challenge to Schools

Workforce performance and development has become an essential prerequisite to a successful economic development effort. Both economic and workforce development have become intertwined. "Our changing workplaces and workforce requires the same effort and attributes that characterized the successful economic development efforts during the 1980s: strong, broad-based partnerships, focused mechanisms, and a regional approach to the effort" (Ovel, 2000). A report released in January 1999 by the Iowa Business Council entitled Iowa's Economic Future: People, Knowledge, and Know How warned: "Iowa's well of potential employees has nearly run dry, and population growth is flat. Economic growth is now stifled by the lack of qualified workers. A shortage of skilled Iowans promises to be the greatest economic crisis since the farm crisis of the early 1980s" (Ovel, 2000). The study concluded by stating: "Manufacturing is still the engine that drives America's booming economy. Its productivity, as well as the qualify, cost effectiveness and creativity of its products, are the envy of both developed and

developing countries, which are now our principal customers and competitors" (Ovel, 2000).

Our schools need to cultivate critical thinking and to provide the environment to understanding the changing environment and what will be required of the 21st Century economy. "The great educational pragmatist was John Dewey, who viewed education as a process for improving (not accepting) the human condition. The school was seen as a specialized environment that coincided with the social environment. No demarcation exists between school and society. The curriculum, ideally, is based on the child's experiences and interests, and prepares him or her for life's affairs and for the future" (Ornstein & Hunkins, 1998). The focus in schools should therefore be placed on:

- Active-learning,
- Acquiring methods or processes of solving problems,
- Relevant learning, and
- Meeting the needs of the community.

## Conclusion

Whether a community or state has a competitive advantage depends on the skills of their workforces. The 21st century demands a more educated and skilled workforce (Ovel, 2000; Grubb, Badway, Bell, Bragg, & Russman, 1997; & Thomas & Wagner, 2000).

The goal of education is to provide youth for the future. As Dewey indicated there is a relationship between education and democracy and democracy is a social process that can be enhanced through the school. Schools in America are instruments of

democracy. Society and aims of education both influence each other (Ornstein & Hunkins, 1998).

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## Editorial Policy:

The Journal of Health Occupations Education, official publication of the Health Occupations Education Division of the Association for Career & Technical Education (ACTE), was developed to facilitate communication among members of the profession on current research and findings in the field, trends and issues in health care, and media sources which impact on Health Occupations Education. Submission of manuscripts is encouraged. All submissions are reviewed by the editors, research articles are "blind" referred through electronic mail as "Word" attached files. No payment is made to authors. The views expressed in the Journal of Health Occupations Education are those of the authors and do not necessarily representation official position of the Health Occupations Education Division or the Association for Career & technical Education.

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Larry Hudson, Ph.D. Editor