Council for Education Policy,
Research and Improvement

AN EVALUATION OF THE ROLE OF COMMUNITY COLLEGES AND SCHOOL DISTRICTS IN APPRENTICESHIP PROGRAMS

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COUNCIL FOR EDUCATION POLICY, RESEARCH AND IMPROVEMENT

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Prepared in Response to Specific Appropriations 187 through 191
of the 2001 General Approrpiations Act

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EXECUTIVE SUMMARY

Legislative Charge

The 2001 Florida Legislature directed the Council for Education Policy, Research and Improvement to complete a review of the roles of school districts and community colleges in registered apprenticeship programs, relative to program quality and achievement of basic skills. Issues to be examined include the following: the demographic characteristics of the participants in the programs, the completion rate and average time to completion in the programs, the relationship of the number of hours of classroom instruction to on-the-job training, the fiscal advantages and disadvantages of continuing to exempt matriculation and fees for registered apprentices, and the impact of the apprenticeship programs on the Workforce Development Education Fund. In addition, recommendations should address provisions for the start-up of new apprenticeship programs.

An overview of the findings for each of the required areas of study are listed below.

Demographic Characteristics of Registered Apprentices

- The percentage of minorities (African-American and Hispanic) in apprenticeship has been gradually increasing since 1996, from 27 percent in 1996 to 35 percent in 2001.
- Over this same period, the percentage of women has been decreasing, from 14 percent to nine percent.
- The total number of minorities enrolled has increased by 66 percent over this period, while the number of females has decreased by 14 percent.
- From 1990 to 1994, the percentage of new female apprentices almost doubled (from 10.6 percent to 20.4 percent). Yet from that point until 1999, the numbers dropped dramatically to a low of 12.9 percent.
- From 1990 to 1999, the percentage of new apprentices who are African-American has increased from 11.9 percent to 18.7 percent. Similarly the Hispanic share of the new apprentice population more than doubled in the nine-year period (6.5 percent to 14.7 percent) with the increase remaining consistent and steady. Both minority categories continue an upward trend in 1999 with their highest enrollment over the nine-year period.
- When examining enrollment in programs offered through apprenticeship and vocational certificate programs, differences emerge in the racial and gender composition. While the percentage of females enrolled appears similar for many programs, a higher percentage of women are found in vocational programs than apprentice programs in carpentry, commercial foods and culinary arts, firefighting and heavy equipment operation. Similarly, in community college programs, differences in gender composition are apparent in electricity and carpentry, while females are better represented in machining apprenticeship programs than in non-apprentice vocational. Minority representation is higher in school district and community college vocational programs than in apprenticeship programs in most programs.

Completion Rates and Average Time-to-Completion

- Students were assigned to cohorts based on the estimated year of indenture into the registered program. Rates were calculated for the 1990 through 1995 cohorts, to allow for an appropriate tracking period for completion through 2000. Completion rates ranged from a low of 30 percent for the 1995 cohort and a high of 36 percent for the 1992 cohort.
- Among the occupations with the most apprentices being trained in the 1995 cohort and reported in Appendix A-Table 4, the highest completion rates were for child care development specialist (47 percent), maintenance repair (40 percent), and heating and air conditioning (35 percent). Those occupations with the lowest completion rates were structural steel worker (13 percent), carpenter (17 percent), sheet metal worker (18 percent) and hotel and restaurant cook (18 percent).
- For the 1995 cohort, the completion rate for two-year programs was 46 percent compared to 25 percent for four-year programs.
- The completion rate for students with some instruction or OJT credit is 40 percent, compared to 25 percent for apprentices without credit.

On-the-Job Training and Related Training Instruction

- An analysis of the state-registered programs reveals that the average number of hours required is 163 for apprentices in Florida, ranging from the minimum of 144 to a maximum of 272. Most programs (65 percent) only require the minimum of 144 hours in instructional training per year.
- About 60 percent of programs require four years of training, for a total of 8,000 hours of on-the-job training.
- Based on survey responses, program sponsors report that they utilize a variety of methods to ensure that the curriculum and on-the-job responsibilities are linked. Sponsors rely on job rotations and progressive tasks on the job site to provide apprentices with the skills necessary to move through the program. For an apprentice to remain in the program, competency of skills, based on years in the program, must be demonstrated.

Workforce Funding and Matriculation Fees

- For each college and school district with apprenticeship programs, the points generated per headcount were calculated for apprenticeship and adult vocational programs (Appendix A-Table 8). As a whole, community colleges are not getting the same performance in the formula from their apprenticeship students as the school districts. For community colleges, apprentices generated 2 points, on average, in the formula, compared to 3.3 points for school districts.
- Colleges or districts wanting to start apprenticeship programs have several options for funding: (1) using any funding gained in the formula for new program development, (2) shifting resources from low productivity programs into new ones, (3) Workforce Development Capitalization Incentive Grants (with a diminishing possibility of funding in recent years). The current funding situation, with a mid-year reduction of $52 million in the 2001-02 Workforce Development Education Fund, makes the availability of additional revenue for apprenticeship expansion unlikely in the near future.

- Based on current registration of 11,492 apprenticeship students and assuming the maximum number of hours required for the first year of indenture, the estimated total annual revenue that would be generated by the payment of matriculation fees is $2,769,958.
- The main fiscal advantage to removing the exemption for matriculation and other fees is the revenue generated by the fee collection to expand or develop new partnerships with apprenticeship programs.
- The survey of program sponsors revealed two main concerns over the implementation of fees: (1) decrease in enrollment in their program, resulting from students not being able to afford the fees, and (2) possible termination of the agreement with the local LEA with training provided without LEA participation.

Summary And Recommendations

Two areas of improvement were considered in the development of recommendations to address these apprenticeship issues: Accountability and Funding. In making these recommendations, the Council wishes to emphasize the importance, success, and value of these programs to the communities they serve. The recommendations presented are for the purpose of strengthening an excellent program.

Accountability

1. Uniform standards for the reporting of apprenticeship headcount and instructional hours should be developed by community colleges and school districts using the following provisions:

a. Data collected by community colleges and school districts on enrollment (headcount and instructional hours) should be linked to the federal Apprenticeship Information Management System. The student record should reflect the state-registered apprenticeship program in which the apprentice is indentured.

b. Full-time equivalent reporting for apprenticeship should separate for clock or membership hours associated with the required related training instruction portion of the program from the on-the-job training hours.

2. The State Apprenticeship Council should evaluate the recent decrease in the percentage of females in registered apprenticeship programs. This evaluation should consider the potential reasons for the recent decline and alternatives for encouraging appropriate participation of women in their state-registered programs.

Workforce Funding and Matriculation Fees

3. The current fee exemption should be statutorily amended to give the community college or school district the discretion to grant exemptions for matriculation, registration and laboratory fees, under the following conditions:

a. **Fees may only apply to the related training instruction hours required by the apprenticeship agreement and may not exceed the vocational clock hour fee.**

b. **The community college or school district should consider the local contributions of the program sponsor toward the related training instruction component of the program in the decision of whether to grant the exemption.**

c. **The program sponsor should have the flexibility to seek a partnership agreement with another LEA if an agreement on fees cannot be reached between the sponsor and the LEA. In the event a new agreement is reached with another LEA, in the fiscal year following its inception, the base and performance funding relating to the apprenticeship program should be transferred to the new LEA.**

d. **The waivers granted by the local LEA for apprenticeship students should be excluded from the waiver limit of eight percent for workforce development appropriations (2001 General Appropriations Act, Specific Appropriations 171).**

4. **Provisions for the start-up of new programs should remain a local decision. The current oversight of the State Apprenticeship Council and the local arrangements are sufficient to ensure the development of quality programs.** Support for new apprenticeship programs ultimately comes from the business and industry partners who are seeking a trained workforce for their member employers. The creation of partnerships for new apprenticeship programs is a locally controlled decision and should remain so. However, all colleges and districts maintain the flexibility to utilize existing opportunities for expansion such as any new performance incentive funding, potential workload increases in future funding formulas, and workforce development grants.

INTRODUCTION

Legislative Charge

In Specific Appropriation 187 to 191, the Council for Education Policy, Research and Improvement was directed to complete a study on apprenticeship programs by February 15, 2001, as follows:

> *...a review of the roles of school districts and community colleges in registered apprenticeship programs and their responsibilities related to program quality and student achievement in basic and technical skills. The review will address the relationship of the number of hours of classroom instruction to on-the-job training; the demographic characteristics of the participants in the programs; the completion rate and average time to completion in the programs; and recommendations related to provisions for the start-up of new apprenticeship programs. The review will address the fiscal advantages and disadvantages of continuing to exempt matriculation and fees for registered apprentices and the impact of the apprenticeship programs on the Workforce Development Education Fund.*

Apprenticeship As A Training Opportunity

First authorized by The National Apprenticeship Act of 1937 (Fitzgerald Act), the U.S. Department of Labor and state apprenticeship agencies oversee the registration of apprenticeship programs. Apprenticeship training is a combined program of on-the-job training and related training instruction through which a participant gains both practical and theoretical skill in an occupation. All apprenticeship programs are sponsored by employers, either joint (union) or non-joint (non-union). The sponsor may be an individual employer or a group of employers.

Every apprentice enters into an apprenticeship agreement in which the sponsor and apprentice agree to terms based on the program standards. All training programs consist of a structured, on-the-job training component of at least 2,000 hours each year. A skilled worker provides supervision during the term of the apprenticeship and wages are paid to the apprentice based on a wage schedule (outlined in the registered apprenticeship standards) that increases progressively as skills are obtained throughout the program. The related training instruction component supplements the on-the-job training portion of the program. These hours vary depending on the occupation with a minimum of 144 hours required for each year of the program. The total length of the program may be anywhere from one to six years, depending on the occupation.

Upon successful completion of the program, the apprentice receives an apprenticeship completion certificate. The apprenticeship certificate is issued by a federally approved State Apprenticeship Council or Agency, or the Bureau of Apprenticeship and Training (BAT). One of the benefits of this program is the portability of most state-issued apprenticeship certificates. According to the BAT, this certificate is “one of the oldest, most basic, and most highly portable industry credentials in use today.”

Registered Apprenticeship in Florida

Section 446.011, Florida Statutes, places responsibility for the development of apprenticeship and pre-apprenticeship uniform minimum standards with the Division of Workforce Development of the Department of Education. The division is required to register all programs in accordance with their guidelines. The State Apprenticeship Advisory Council provides advisory assistance to the division on matters relating to apprenticeship. This body consists of 13 members, with the division director serving as ex officio chair of the Council. The statutory criteria for apprenticeship occupations require that apprenticeship programs involve "manual, technical, or mechanical skills and knowledge" and "the development of skill sufficiently broad to be applicable in like occupations throughout an industry, rather than of restricted application to the products or services of any one company" (s. 446.092, F.S.).

As of September 30, 2001, there were 324 registered programs; only 57 percent (186) of these programs had more than five apprentices. Sixty-seven percent (218) of programs were sponsored by non-joint employers. The division reports that there are approximately 10,500 apprentices in registered programs in Florida, the majority in the construction trades (8,919 or 84 percent). The number of registered apprentices has increased by 30 percent since September 1996.

As of December 2001, state-registered apprentices are receiving training in 92 different occupations. Five occupations account for 64 percent of total enrollment: electrician (35.7 percent), plumber (10.5 percent), heating and air conditioning installer/service (7.3 percent), childcare development specialist (5.4 percent), and pipe fitter (4.6 percent).

Community College and District Participation in Apprenticeship

Community colleges and districts enter into local agreements with apprenticeship sponsors to provide assistance with the related training instruction portion of the program. The amount of funding provided differs based on this local agreement. Currently, twenty-two school districts have approved apprenticeship programs, as do ten community colleges. These institutions offer 170 programs throughout the state. In 2000-01, community colleges reported enrollment of 5,124 apprenticeship students and districts reported 8,667.

Colleges or districts offer programs in the following areas: carpentry, electricity, electrician, plumbing, roofing, swimming pool maintenance, commercial heating and air conditioning, general machining, sheet metal fabrication, applied welding, surveying and mapping, child care and early childhood education, commercial foods and culinary arts, structural steel work, fire sprinkler system technology, heavy equipment operation, brick and block masonry, painting and decorating, tile setting, electrical line service and repair, building maintenance, plastering, industrial machinery maintenance, millwright, cabinetmaking, concrete masonry, commercial and industrial insulation, sports and recreational turf operations, heavy duty truck and bus mechanics, food management, glazing, automotive collision repair and refinishing, industrial plastics, marine service, fire fighter, and automotive service technology.

Outcomes Associated with Apprenticeship

One of the most important benefits of the apprenticeship programs involves the employment outcomes associated with completion. Through the Florida Education Training and Placement Information Program, it is possible to quantify the employment benefits of apprenticeship training. The average full-time wages for 1998-99 apprenticeship completers were $8,437, which translates into an annual estimated salary of $33,748. This average annual salary exceeds the per capita personal income of $28, 145 for Florida residents in 2000. In fall 1999, 84 percent of apprenticeship completers were earning hourly wages of at least $9.00 per hour. Completers of registered apprenticeship programs perform extremely well in comparison to other types of completers (**Table 1**). Apprenticeship completers continue to perform well compared to other completers in longer-term wages; 1996-97 apprenticeship completers

Table 1
Employment Outcomes, Fall 1999 Average Quarterly Wages *

Completion Year	Type of Completion			
	Registered Apprentices	Comm. Coll. Voc. Cert.	Comm. Coll. A.S. Degree	Bachelor's Degree (State Univ.)
1996-97	$9,061	$8,808	$9,178	$9,274
1997-98	$8,654	$8,602	$8,909	$8,598
1998-99	$8,437	$8,198	$8,266	$7,848

*Estimated Full-Time, Full Quarter
Source: Florida Education Training and Placement Information Program, Annual Outcomes Report

earned $9,061 compared to $8,437 of 1998-99 apprenticeship completers. It should be noted that other types of completers, as they gain the work experience that apprentices already possess at completion, catch up to the wages earned by apprentices in subsequent years. The average quarterly wages for a 1998-99 apprentice completer are $8,427 compared to $8,808 for a 1996-97 community college vocational certificate completer.

STUDY ISSUES

This study involves the examination of several issues relating to the role of community colleges and school districts in apprenticeship programs. Among these are demographics, program components, completion rates and average time to completion, and workforce funding.

Role of Local Educational Agencies in Apprenticeship Programs

The relationship between the local educational agency (LEA) and the program sponsor is an important factor in analyzing these issues. Ultimate responsibility for the progression of the student through the training program lies with the program sponsor, not the LEA. As important is that the apprenticeship program relies upon a local agreement between the sponsor and the LEA to provide the instructional component of the program. There are currently more than 300 programs registered in Florida. No standard contract or relationship exists between LEAs and sponsors; therefore, there is a great deal of variability in these local arrangements. In some programs, the program sponsor provides industry standard facilities, while in others the training occurs in LEA facilities. Funding for the program from state revenue is a local decision and differs by sector (college or district) and region.

In addition, the program sponsor determines the entry-level requirements for apprenticeship programs and these standards may vary widely. While all apprentices are tested for basic skills upon entry in the program, completion of the program (state apprenticeship certificate) is not dependent upon an exit standard in basic skills. The skills required for completion are largely dependent on the needs of the occupation for which the apprentice is trained, as defined by the program sponsor. A survey of program sponsors reveals a variety of basic entry standards, ranging from high school diploma or GED to specific math skills such as algebra completion. Remediation for apprentices with basic skills deficiencies is usually voluntary unless specific job skills, particularly in mathematics, are required.

Data Issues

A significant barrier encountered during the analysis of these issues ties back to the LEA and program sponsor relationship. The collection of data with which to examine the relationship presented a challenge. The registration, cancellation and completion activities of apprentices are tracked through a separate database (Apprenticeship Management Information System, or AIMS) than those the community colleges and school districts utilize. No linkage between the federal database and the LEA databases exist. Examination of each data source reveals inconsistencies between the data collected by the program sponsor and the LEA. The combined enrollment in apprenticeship as reported by school districts and community colleges exceeds the number of registered apprentices reported in the AIMS database. Additionally, until recently, data entry problems have made some data available through AIMS unreliable. Although these problems have since been addressed, the AIMS data used for the demographic breakdowns and completion analysis was collected prior to the recent updates. Due to these discrepancies, different data sources were used for the various issues, each with their own limitations.

Demographic Characteristics of Registered Apprentices

The only student characteristics for which data was available were age, gender and race/ ethnicity. Data was collected from the federal AIMS database and community college and school districts enrollment reports.

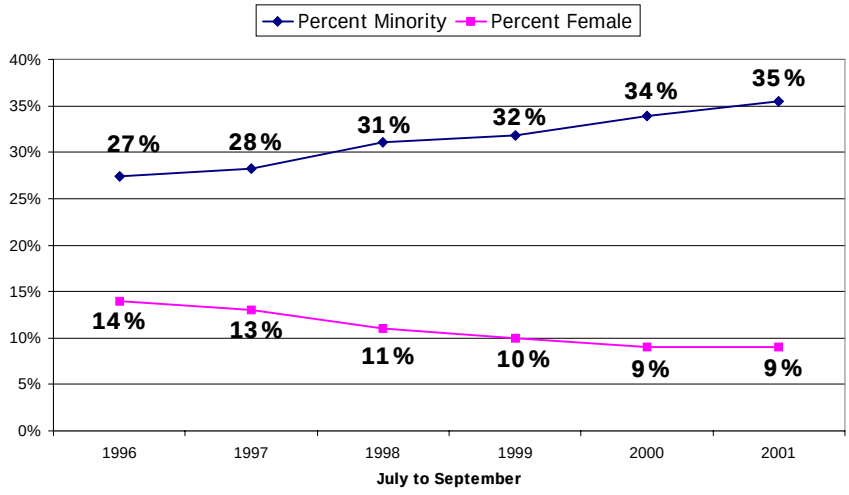
Age

In December 2001, the age breakdown of registered apprentices, (as reported in the AIMS database), was as follows: age 22 year and younger (28 percent), age 23 to 28 (28 percent), age 29 to 34 (18 percent) and age 35 and over (26 percent). This breakdown by age is similar to non-apprenticeship vocational programs, with the exception of the upper age ranges. The age breakdown for students enrolled in similar fields, as reported in community college and school district databases, was the following during the 2000-01 academic year: age 22 and younger (30 percent), age 23 to 28 (15 percent), age 29 to 34 (14 percent) and age 35 and over (40 percent).

Gender and Race/Ethnicity

The gender and race/ethnicity of registered apprentices has been highlighted because of perceptions about the non-traditional nature of the occupations for which apprentices are being trained and whether apprenticeship programs are less likely to include minorities and women. Selection of apprentices for registered programs occurs as the program level, not by the local LEA. The programs are required by federal administration code to provide a non-discriminatory selection process. The *Code of Federal Regulations,* Part 29, mandates that registered apprenticeship programs "recruit, select, employ, and train apprentices, without discrimination because of race, color, religion, national origin, or sex" (s. 30.3). Programs are also required to adopt affirmative action plans to ensure minority and female participation.

Figure 1
Minority and Female Registered Apprentices, 1996 to 2001



According to AIMS data, the percentage of minorities in apprenticeship has been gradually increasing since 1996, from 27 percent in 1996 to 35 percent in 2001 (**Figure 1**). Over this same period, the percentage of women has been decreasing, from 14 percent to nine percent. The total number of minorities enrolled has increased by 66 percent over this period, while the number of females decreased by 14 percent.

These enrollment trends by gender and race/ethnicity are mirrored in an examination of new apprentices from 1990 to 1999. **Table 2** describes the demographics of new apprentices

registered during those years. From 1990 to 1994 the percentage of new female apprentices almost doubled (from 10.6 percent to 20.4 percent). Yet from that point until 1999, the numbers dropped dramatically to a low of 12.9 percent.

From 1990 to 1999 the percentage of new apprentices who are African-American has increased from 11.9 percent to 18.7 percent. Similarly the Hispanic share of the new apprentice population has more than doubled in the nine-year period (6.5 percent to 14.7 percent) with the increase remaining consistent and steady. Both minority categories continue an upward trend in 1999 with their highest enrollment over the nine-year period.

Table 2
New Apprentices Registered by Year of Entry, Gender, and Race/Ethnicity, 1990-1999

Year	Total Gender	Percent Female	Total Race	Percent White	Percent African-Amer.	Percent Hispanic
1990	3,024	*10.6%*	3,024	*80.4%*	*11.9%*	*6.5%*
1991	2,279	*17.4%*	2,279	*79.3%*	*13.3%*	*6.4%*
1992	2,830	*22.2%*	2,830	*74.6%*	*16.7%*	*7.1%*
1993	3,691	*19.6%*	3,691	*71.8%*	*17.5%*	*8.9%*
1994	4,316	*20.4%*	4,316	*71.9%*	*16.6%*	*9.5%*
1995	4,604	*19.3%*	4,604	*70.1%*	*16.4%*	*11.4%*
1996	4,577	*16.6%*	4,577	*69.5%*	*16.6%*	*12.0%*
1997	4,785	*12.9%*	4,785	*66.2%*	*18.4%*	*13.8%*
1998	5,172	*13.0%*	5,187	*67.6%*	*16.9%*	*13.6%*
1999	5,199	*12.9%*	5,202	*64.8%*	*18.7%*	*14.7%*

Source: Apprentice Information Management System
NOTE: These totals include federally registered programs.

Among the top ten occupations for which apprentices are trained in Florida, significant differences emerge when gender and race/ethnicity are examined. **Appendix A-Table 1a** displays the percentage of new female apprentices in the top occupations for 1990, 1995, and 1999. In 1990, female representation was highest in child care development specialist (97 percent), cook (29 percent) and painter (13 percent). But in 1999, female representation was more than ten percent in only one occupation – child care development specialist. Close examination of the data reveals that overall female representation would drop to less than five percent of new apprentices in 1999 if child care development specialist apprentices were excluded.

Appendix A-Table 1b provides similar data on the racial composition of new apprentices in the top occupations. Significant gains in minority representation can be seen in several occupations. Among electricians, minority representation (African-American and Hispanic) among new apprentices has increased from 15 percent in 1990 to 29 percent in 1999. Similar gains are seen in the plumbing occupation with minority representation tripling over the same period, from 11 percent to 35 percent. In 1999, the occupations with the highest percentage of new apprentices who are African-American or Hispanic were bricklayer (60 percent), structural-steel worker (52 percent) and carpenter (47 percent).

Data was collected to compare enrollments by gender and race/ethnicity in the school districts and community colleges programs for apprenticeship and other vocational programs. Only those occupations for which both an apprenticeship and another vocational program were offered in the system were examined. Differences in the reported gender and racial composition of apprentices and other non-apprentice vocational programs by community colleges and school districts are reported in Appendix A.

Appendix A-Table 2a displays the school district comparison by gender. While the percentage of females enrolled appears similar for many programs, a higher percentage of women are found in vocational programs than apprentice programs in carpentry, commercial foods and culinary arts, firefighting and heavy equipment operation. Similarly, in community college programs (**Appendix A-Table 2b**), differences in gender composition are apparent in electricity and carpentry, while females are better represented in machining apprenticeship programs than in non-apprentice vocational.

With the exception of carpentry programs, minority representation is higher in school district vocational programs than in apprenticeship programs (**Appendix A-Table 3a**). This trend is the same for community college vocational programs as well with the exception of machining programs, in which the percentage of minorities is higher in apprenticeship (**Appendix A-Table 3b**).

Completion Rates and Average Time-to-Completion

Completion rates and average time-to-completion data were compiled for apprentices from a federal database of Florida's registered apprentices from 1990 to 2001 (see Appendix B for methodology). For purposes of these analyses, completion is defined as the issuance of the state apprenticeship certificate from a registered program. Apprentices may also receive a postsecondary adult vocational certificate from the partner LEA but that completion was not considered in this report.

Completion Rates

Students were assigned to cohorts based on the estimated year of indenture into the registered program. Rates were calculated for the 1990 through 1995 cohorts, to allow for an appropriate tracking period for completion through 2000. **Table 3** displays the finding on the number and percentage of apprentices completing the apprenticeship program. Completions rates ranged from a low of 30 percent for the 1995 cohort and a high of 36 percent for the 1992 cohort. As

Table 3
Completion Rates for Registered Apprentices by Year of Indenture

Year Started	Total in Cohort	No. Completed	Percent Completed	Percent Completed or Still Registered
1990	2,976	906	30.4%	36.9%
1991	2,219	761	34.3%	40.0%
1992	2,742	981	35.8%	39.7%
1993	3,641	1,175	32.3%	37.1%
1994	4,246	1,333	31.4%	38.8%
1995	4,494	1,350	30.0%	40.4%

SOURCE: Apprenticeship Information Management System, data provided by Florida Dept. of Education

mentioned earlier, the reliability of the AIMS database has been an issue in the past and the data analyzed here was collected prior to the data updates. For this reason, it is possible that completion rates are underreported and the actual rate may be higher. To examine data reliability, the percentage of apprentices in a cohort who have completed or who were still listed registered in the program was calculated. This completion/registered rate is up to 10 percent higher than the completion rate for some years. This difference indicates that either completions or program cancellations were not being properly entered, especially for the earlier cohorts.

A further examination of completion rates reveals differences based on occupation, program length and whether instructional or on-the-job credit was awarded. Among the occupations with the most apprentices being trained in the 1995 cohort (**Appendix A-Table 4**), the highest completion rates were for childcare development specialist (47 percent), maintenance repair (40 percent), and heating and air conditioning (35 percent). Those occupations with the lowest completion rates were structural steel worker (13 percent), carpenter (17 percent), sheet metal worker (18 percent) and hotel and restaurant cook (18 percent).

The completion rate for two-year programs was 46 percent compared to 25 percent for four-year programs (**Appendix A-Table 5**). It should be noted that program length is highly correlated with the occupation. For example, child care development programs are shorter in length and have a high completion rate. It is not clear if the higher completion rates for shorter programs are a function of program length or some characteristic of the occupations. Through conversations with program sponsors who deal with apprentice retention issues, the consensus appears to be that once a student is retained in the second year, the likelihood of completion increases dramatically. This is consistent with other evidence on retention and completion in other types of postsecondary enrollments. Another factor that appears related to completion rate is whether instructional or on-the-job training credit was awarded to the apprentice. As **Appendix A-Table 6** indicates, the rate for students with some instruction or OJT credit is 40 percent, compared to 25 percent for apprentices without credit.

Average Time To Completion

For every apprentice who started and completed a program from 1990 to 2000, the number of years to completion was calculated (see Appendix B for methodology). **Table 4** provides average time to completion in years by the program length. The average time to completion was 2.36 years for two-year programs, 3.36 years for three-year programs and 4.08 for four-year programs.

Table 4
Average Time to Completion by Program Length

Number of Years in Program	No. Students	Average Completion Time (in years)
One	n/a	n/a
Two	2,449	2.26
Three	2,147	3.36
Four	6,422	4.08

Source: Apprenticeship Information Management System

As would be expected, one factor that significantly reduces time to completion is the awarding of instructional and OJT credit. **Appendix A-Table 7** displays the results when average time to completion is calculated for each program length category. The average completion time in the ten-year period decreases progressively with the awarding of OJT credit and even more

with the awarding of both instructional and OJT. For example, in four-year programs, the average time was 4.53 for apprentices with no credit, 3.46 with OJT credit, and 2.56 with both types of credit.

On-the-Job Training and Related Training Instruction

One of the concerns with the apprenticeship program has been the linkage between the on-the-job components of the programs and the instructional components. Each program sponsor develops guidelines relative to what the sponsor determines is an appropriate training period for their occupational area. This may lead to variability among similar programs within the same occupation in the number of years and/or the number of training hours required. Program sponsors review these standards to ensure that the industry standard is consistent with the training methods being utilized.

The minimum number of instructional hours required for all programs is 144 per year with 2,000 hours of OJT. An analysis of the state-registered programs reveals that the average number of hours required is 163 for apprentices in Florida, ranging from the minimum of 144 to a maximum of 272. Most programs (65 percent) only require the minimum of 144 hours in instructional training per year. About 60 percent of programs require four years of training, for a total of 8,000 in OJT. For most of the occupations, the length of training does not vary among different programs, but there is some variability.

Based on survey responses, program sponsors report that they utilize a variety of methods to ensure that the curriculum and on-the-job responsibilities are linked. Sponsors rely on job rotations and progressive tasks on the job site to provide apprentices with the skills necessary to move through the program. Coordinators evaluate an apprentice's progress through such methods as monthly reports and assessments. For an apprentice to remain in the program, competency of skills, based on years in the program, must be demonstrated.

Funding and Matriculation Fees

The development of the Workforce Development Education Funding Formula (WDEFF) has presented funding challenges for all vocational education and apprentice programs. Prior to the adoption of the WDEFF, base funding for school district apprenticeship programs was generated by enrollment (full-time equivalents or FTE). Community college apprenticeship programs were enrollment funded until 1991, when the performance-based incentive funding replaced it; and school district apprenticeship programs were enrollment funded until 1997. At the time of enrollment funding for programs, FTE for apprenticeship programs could include both classroom hours and on-the-job training hours supervised by the local LEA (25 contact hours).

Impact of Apprenticeship on WDEFF

Following adoption of the WDEFF, performance-based funding for apprenticeship was included in the vocational fund, which also included funding for other postsecondary vocational programs. Any new funding for apprenticeship programs has come from the initial FTE based formula and supplemented by increases in vocational funding generated by the performance formula. Data from sector cost reports indicate that direct expenditures on apprenticeship programs in 1999-00 were $18,470,605. Community colleges and districts expended $5,630,887 and $12,839,718, respectively.

In the funding formula, apprenticeship programs receive completion points, but no placement points. Placement points are not included for apprenticeship because employment is a condition of participation in the program. However, an additional multiplier is applied to apprenticeship completions to recognize their placement. Unlike other vocational programs, usually only one completion (OCP) can be generated per year (sometimes the timing of enrollment will result in two completion points).

In the 2001-02 WDEFF (based on 1999-00 completions), apprenticeship programs generated 9.3 percent of total points in the vocational fund, resulting in $3,496,328 in funding based on performance. These performances were generated on 6,318 occupational completions (OCPs): 1,350 for community colleges and 4,968 for districts.

When examining the impact of apprenticeship on the workforce development fund, it became clear that at least one institution, and perhaps more, were underreporting the completions associated with apprenticeship. Florida Community College at Jacksonville has already submitted updated data for the correction cycle of the funding formula. The college documented significant underreporting of apprenticeship completions. For this reason, the actual effect of performances in apprenticeship is underestimated in the 2001-02 formula.

To evaluate the effect of apprenticeship compared to other vocational programs, headcount and completion points generated were examined. **Appendix A-Table 8** reports the headcount for apprenticeship and adult vocational programs and the points generated in the formula. For each college and school district with apprenticeship programs, the points generated per headcount were calculated for apprenticeship and adult vocational programs. As a whole, community colleges are not getting the same performance in the formula from their apprenticeship students as the school districts. For community colleges, an apprentice headcount generated 2 points, on average, in the formula, compared to 3.3 points for school districts. Some of this difference results from the underreporting of performances mentioned earlier. It is critical that performances be appropriately reported during the development and application of the funding formula.

Overall, performance in the formula for school districts was the same for apprenticeship and vocational programs (3.3 points per headcount). However, for community colleges, there was a clear disparity. An apprenticeship student generated two points while a non-apprentice vocational student generated five and a half points. The higher return for non-apprentice adult vocational is clearly related to the higher placement points generated by these students. The average placement points for school district programs is 1.8, compared to 4.0 for community colleges. The mix of programs at community colleges apparently leads to higher level (i.e. higher wage) placements than those at school districts.

Fee Exemption for Apprenticeship Students

Unlike other students in postsecondary training, students enrolled in registered apprenticeship programs are exempt from payment of registration, matriculation and laboratory fees. Students in traditional postsecondary adult vocational programs are required to pay matriculation and other fees for their enrollment in community college and school district vocational programs. Florida Statutes s.239.117(4)(b) exempts students who are enrolled in an approved apprenticeship program from the payment of registration, matriculation and laboratory fees.

This exemption was originally granted to students in registered apprenticeship programs through Chapter 87-329, Laws of Florida. Until recently, matriculation fees for vocational education were extremely low. In 1987, the annual Florida resident fee for vocational programs was $200 per FTE, or about 22 cents per hour. The current rate of $1.36 per hour is five times the fees charged when the exemption was originally granted. From 1987 to 1992, statutory language made the fee exemption discretionary on the condition that "contributions of facilities, personnel, or equipment made on the behalf of the students equal or exceed the total value of the fee exemptions" (s. 230.645, F.S.). This condition was deleted in 1992 when the statute on postsecondary student fees was moved to s. 239.117. It was not possible to determine through statutory research the justification for the removal of this clause.

Consideration of removing or changing the exemption for apprentices is largely driven by two factors: equity among vocational programs and scarcity of resources. The equity issue involves the fairness of requiring students in non-apprenticeship vocational programs for the same occupations to pay hourly fees for instruction. The same burden of working and attending school exists for the vocational students and they are still required to pay a portion of the cost of instruction.

The justification for the fee exemption has been that the program sponsor assumes some of the costs associated with the program. No reliable analysis of how much program sponsors contribute to the instructional costs is known. A survey of program sponsors reveals the percentage of overall annual costs assumed by program sponsors ranges from 31 percent to 90 percent. However, these calculations include wages and benefits paid to apprentices. Since all program agreements between LEAs and sponsors are locally negotiated, no reliable data on program costs exists. The LEA negotiates the amount provided for the related training instruction for the program.

The second issue involves the availability of state funding for apprenticeship. With the development of the workforce funding formula, the state has given local LEAs the flexibility to provide a mix of programs that maximize performances. This provides incentives for them to move their resources into those programs that are most productive. In addition, when funding for apprenticeship and vocational programs was placed in the same fund for all LEAs, the only institutions with funding in their base for apprenticeship were those involved in apprenticeship when the formula was started. Colleges or districts wanting to start apprenticeship programs have several options for funding: (1) using any funding gained in the formula for new program development, (2) shifting resources from low productivity programs into new ones, (3) Workforce Development Capitalization Incentive Grants (with a diminishing possibility of funding in recent years). Previously, the Postsecondary Education Planning Commission (PEPC) recommended the use of continuing workforce education funding for new program development. This recommendation was not adopted. The current funding situation, with a mid-year reduction of $52 million in the 2001-02 WDEF, makes the availability of additional revenue for apprenticeship expansion unlikely in the near future. With these funding realities, only a handful of LEAs have started to sponsor new apprenticeship programs and the prospects for additional funds for this purpose in the near future are not promising.

Estimate of Matriculation Fees for Registered Apprentices

To understand the financial incentives for allowing fees for the instructional component of the apprenticeship program, the actual cost of the exemption must be calculated. The fiscal impact

of exempting matriculation fees was examined based on the assumption that only related training instruction (RTI) hours should be used. On-the-job training hours were excluded from the calculations. Since the FTE reported by community colleges and school districts may include some OJT hours, this source was not used to evaluate the fiscal effect of the fee exemption. For the currently registered apprenticeship programs, data was gathered on the annual required RTI hours for each registered program and the number of apprentices in those approved programs. The estimated total number of RTI hours generated by registered apprentices was calculated by multiplying RTI hours in each program by the number of apprentices. These hours were multiplied by $1.36, the current clock hour matriculation fee for postsecondary vocational programs, for an estimate of the matriculation fees that were foregone due to the exemption.

Estimated Matriculation Fees = (RTI Hours Required * # Apprentices) * $1.36

Based on current registration of 11,492 apprenticeship students and assuming the maximum number of hours required for the first year of indenture, the estimated total annual revenue that would be generated by the payment of matriculation fees is $2,769,958.

Clearly, the main fiscal advantage to removing the exemption is the revenue generated by the fee collection to expand or develop new partnerships with apprenticeship programs. If matriculation fees were charged for clock hour enrollment, the average student cost per year (using the $1.36 per hour fee) would be $220 for each year of the program, ranging from a low of $196 to a high of $370 per year. The potential disadvantages involve the impact of assessing fees on a students ability to pay and potential enrollment in the program. The survey of program sponsors revealed two main concerns over the implementation of fees: (1) decrease in enrollment in their program, resulting from students not being able to afford the fees, and (2) possible termination of the agreement with the local LEA with training provided without LEA participation.

SUMMARY AND RECOMMENDATIONS

Two areas of improvement were considered in the development of recommendations to address these apprenticeship issues: Accountability and Funding. In making these recommendations, the Council wishes to emphasize the importance, success, and value of these programs to the communities they serve. The recommendations presented are for the purpose of strengthening an excellent program.

Accountability

During the data collection portion of this analysis, it became clear that uniform standards for reporting of headcount and instructional hours (FTE) are not currently being used, either within sector or between systems. The two most important discrepancies encountered were the following: (1) the lack of consistency between the database of registered apprentices required by the federal guidelines (AIMS) and the state reporting systems, and (2) the lack of comparability of reported data on headcount and FTE. The lack of consistent calculation for FTE is particularly important, given current efforts to obtain additional workforce education funding based on workload (FTE) increases. Any future evaluation of apprenticeship requires that the data reported by colleges and school districts rely on the same criteria.

Another concern involves the declining participation rate of females in apprenticeship programs over the last few years. Following gains in the early nineties, the reduced participation of women in apprenticeship should be further examined.

To address these issues, the following is recommended:

Recommendations:

1. ***Uniform standards for the reporting of apprenticeship headcount and instructional hours should be developed by community colleges and school districts using the following provisions:***
   a. ***Data collected by community colleges and school districts on enrollment (headcount and instructional hours) should be linked to the federal Apprenticeship Information Management System. The student record should reflect the state-registered apprenticeship program in which the apprentice is indentured.***
   b. ***Full-time equivalent reporting for apprenticeship should separate clock or membership hours associated with the required related training instruction portion of the program from the on-the-job training hours.***

2. ***The State Apprenticeship Council should evaluate the recent decrease in the percentage of females in registered apprenticeship programs. This evaluation should consider the potential reasons for the recent decline and alternative for encouraging appropriate participation of women in their state-registered programs.***

Workforce Funding and Matriculation Fees

A key component of the current Workforce Development Funding Formula is the notion of accountability for performance and the flexibility to achieve those performances. Colleges and school districts offering workforce education are required to maximize the completion performances in order to maintain current levels of funding. Since 1999-00 when the formula was first applied, the size of the fund has not grown considerably. This has lead to pressure for other revenue sources for program maintenance, expansion and development.

With the lack of a standard arrangement between the local LEA and the program sponsor, it is impossible to assess program costs and the relative contributions of each party to the instructional portion of the program. In keeping with the notion of local control and flexibility, the following recommendations on the statutory fee exemption and new programs were developed:

Recommendations*:*

3. The current fee exemption should be statutorily amended to give the community college or school district the discretion to grant exemptions for matriculation, registration and laboratory fees, under the following conditions:

- ***a. Fees may only apply to the related training instruction hours required by the apprenticeship agreement and may not exceed the vocational clock hour fee.***
- ***b. The community college or school district should consider the local contributions of the program sponsor toward the related training instruction component of the program in the decision of whether to grant the exemption.***
- ***c. The program sponsor should have the flexibility to seek a partnership agreement with another LEA if an agreement on fees cannot be reached between the sponsor and the LEA. In the event a new agreement is reached with another LEA, in the fiscal year following its inception, the base and performance funding relating to the apprenticeship program should be transferred to the new LEA.***
- ***d. The waivers granted by the local LEA for apprenticeship students should be excluded from the waiver limit of eight percent for workforce development appropriations (2001 General Appropriations Act, Specific Appropriations 171).***

4. Provisions for the start-up of new programs should remain a local decision. The current oversight of the State Apprenticeship Council and the local arrangements are sufficient to ensure the development of quality programs.
Support for new apprenticeship programs ultimately comes from the business and industry partners who are seeking a trained workforce for their member employers. The creation of partnerships for new apprenticeship programs is a locally controlled decision and should remain so. However, all colleges and districts maintain the flexibility to utilize existing opportunities for expansion such as any new performance incentive funding, potential workload increases in future funding formulas, and workforce development grants.

APPENDIX A

TABLES

Appendix A - Table 1a
New Apprentices Registered by Gender for the Top Ten Occupations in 1990, 1995 and 1999

Entrance Year	Occupation	Total	Female	Male	Percent Female	Percent Male
1990	**Total**	**3,024**	**322**	**2,702**	***10.6%***	***89.4%***
	Electrician	868	24	844	*2.8%*	*97.2%*
	Plumber	222	5	217	*2.3%*	*97.7%*
	Pipefitter	207	6	201	*2.9%*	*97.1%*
	Carpenter	186	6	180	*3.2%*	*96.8%*
	Sheet Metal Worker	158	2	156	*1.3%*	*98.7%*
	Child Care Dev Specialist	148	144	4	*97.3%*	*2.7%*
	Heating & AC Install/Service	125	1	124	*0.8%*	*99.2%*
	Structural-Steel	111	2	109	*1.8%*	*98.2%*
	Cook, Hotel & Restaurant	100	29	71	*29.0%*	*71.0%*
	Painter (Construction)	83	11	72	*13.3%*	*86.7%*
1995	**Total**	**4,604**	**890**	**3,714**	***19.3%***	***80.7%***
	Electrician	1,245	42	1,203	*3.4%*	*96.6%*
	Child Care Dev. Specialist	685	674	11	*98.4%*	*1.6%*
	Plumber	382	10	372	*2.6%*	*97.4%*
	Pipefitter	311	7	304	*2.3%*	*97.7%*
	Heating & AC Install/Service	269	3	266	*1.1%*	*98.9%*
	Carpenter	235	9	226	*3.8%*	*96.2%*
	Cook, Hotel & Restaurant	186	60	126	*32.3%*	*67.7%*
	Sheet Metal Worker	183	5	178	*2.7%*	*97.3%*
	Maintenance Repair, Bldg.	121	17	104	*14.0%*	*86.0%*
	Structural-Steel	109	4	105	*3.7%*	*96.3%*
1999	**Total**	**5,199**	**670**	**4,529**	***12.9%***	***87.1%***
	Electrician	1,774	72	1,702	*4.1%*	*95.9%*
	Plumber	478	17	461	*3.6%*	*96.4%*
	Child Care Dev. Specialist	446	443	3	*99.3%*	*0.7%*
	Heating & AC Install/Service	443	7	436	*1.6%*	*98.4%*
	Pipefitter	334	3	331	*0.9%*	*99.1%*
	Carpenter	248	15	233	*6.0%*	*94.0%*
	Structural-Steel	194	6	188	*3.1%*	*96.9%*
	Bricklayer, Construction	164	2	162	*1.2%*	*98.8%*
	Line Erector	145	1	144	*0.7%*	*99.3%*
	Sheet Metal Worker	113	4	109	*3.5%*	*96.5%*

Source: Apprentice Information Management System
NOTE: These totals include federally registered programs.

Appendix A - Table 1b
New Apprentices Registered by Race Ethnicity for the Top Ten Occupations in 1990, 1995 and 1999

Entrance Year	Occupation	Total	White	African-Amer.	Hispanic	Percent White	Percent African-Amer.	Percent Hispanic
	Total	**3,024**	**2,432**	**361**	**196**	***80.4%***	***11.9%***	***6.5%***
	Electrician	868	732	64	67	*84.3%*	*7.4%*	*7.7%*
	Plumber	222	195	14	10	*87.8%*	*6.3%*	*4.5%*
	Pipefitter	207	175	14	17	*84.5%*	*6.8%*	*8.2%*
	Carpenter	186	135	32	19	*72.6%*	*17.2%*	*10.2%*
1990	Sheet Metal Worker	158	123	14	20	*77.8%*	*8.9%*	*12.7%*
	Child Care Dev. Specialist	148	100	45	1	*67.6%*	*30.4%*	*0.7%*
	Heating & AC Install/Service	125	116	2	4	*92.8%*	*1.6%*	*3.2%*
	Structural-Steel	111	86	11	10	*77.5%*	*9.9%*	*9.0%*
	Cook, Hotel & Restaurant	100	73	20	5	*73.0%*	*20.0%*	*5.0%*
	Painter, Construction	83	59	12	6	*71.1%*	*14.5%*	*7.2%*
	Total	**4,604**	**3,226**	**755**	**526**	***70.1%***	***16.4%***	***11.4%***
	Electrician	1,245	891	185	137	*71.6%*	*14.9%*	*11.0%*
	Child Care Dev. Specialist	685	446	158	70	*65.1%*	*23.1%*	*10.2%*
	Plumber	382	282	55	40	*73.8%*	*14.4%*	*10.5%*
	Pipefitter	311	234	35	38	*75.2%*	*11.3%*	*12.2%*
1995	Heating & AC Install/Service	269	218	23	24	*81.0%*	*8.6%*	*8.9%*
	Carpenter	235	151	48	33	*64.3%*	*20.4%*	*14.0%*
	Cook, Hotel & Restaurant	186	123	25	30	*66.1%*	*13.4%*	*16.1%*
	Sheet Metal Worker	183	137	15	28	*74.9%*	*8.2%*	*15.3%*
	Maintenance Repair, Bldg	121	57	47	15	*47.1%*	*38.8%*	*12.4%*
	Structural-Steel	109	65	21	21	*59.6%*	*19.3%*	*19.3%*
	Total	**5,202**	**3,371**	**972**	**767**	***64.8%***	***18.7%***	***14.7%***
	Electrician	1,774	1,225	292	226	*69.1%*	*16.5%*	*12.7%*
	Plumber	478	304	95	71	*63.6%*	*19.9%*	*14.9%*
	Child Care Dev. Specialist	446	292	97	53	*65.5%*	*21.7%*	*11.9%*
	Heating & AC Install/Service	443	331	46	54	*74.7%*	*10.4%*	*12.2%*
1999	Pipefitter	334	237	39	54	*71.0%*	*11.7%*	*16.2%*
	Carpenter	251	128	56	63	*51.0%*	*22.3%*	*25.1%*
	Structural-Steel	194	91	57	44	*46.9%*	*29.4%*	*22.7%*
	Bricklayer, Construction	164	63	51	48	*38.4%*	*31.1%*	*29.3%*
	Line Erector	145	89	15	41	*61.4%*	*10.3%*	*28.3%*
	Sheet Metal Worker	113	76	19	15	*67.3%*	*16.8%*	*13.3%*

Source: Apprentice Information Management System
NOTE: These totals include federally registered programs.

Appendix A - Table 2a
Enrollment in Selected Programs by Gender for School District Apprentices and Non-Apprentices, 2000-01

PROGRAM	Apprenticeship		Vocational	
	Total	Percent Female	Total	Percent Female
Electricity	2,515	*5.1%*	945	*4.0%*
Early Childhood Education	858	*99.0%*	8,808	*96.6%*
Plumbing	803	*3.6%*	180	*9.4%*
Commercial Heating & AC	736	*1.0%*	1,742	*2.9%*
Carpentry	486	*3.5%*	687	*15.0%*
Electrician	184	*3.3%*	51	*3.9%*
Building Maintenance	155	*11.6%*	393	*14.0%*
Commercial Foods & Culinary Arts	144	*21.5%*	2,014	*42.9%*
Firefighting	142	*8.5%*	1,234	*13.9%*
Heavy Equip Operation	114	*4.4%*	32	*12.5%*
Heavy Duty Truck & Bus Mech	103	*2.9%*	216	*1.4%*

SOURCE: Department of Education, Data Reports on Enrollment

Appendix A - Table 2b
Enrollment in Selected Programs by Gender for Community College Apprentices and Non-Apprentices, 2000-01

PROGRAM	Apprenticeship		Vocational	
	Total	Percent Female	Total	Percent Female
Electricity	2,023	*3.2%*	231	*11.3%*
Commercial Heating & A/C Tech.	619	*2.7%*	425	*5.4%*
Carpentry	304	*4.6%*	108	*9.3%*
Machining	80	*8.8%*	89	*3.4%*
Child Care Center Operations	71	*98.6%*	298	*98.3%*

SOURCE: Division of Community Colleges

Appendix A - Table 3a
Enrollment in Selected Programs by Race/Ethnicity for School District Apprentices and Non-Apprentices, 2000-01

PROGRAM	Apprenticeship				Vocational			
	TOTAL	Percent White	Percent Afric.-Amer.	Percent Hispanic	TOTAL	Percent White	Percent Afric.-Amer.	Percent Hispanic
Electricity	2,515	*64.3%*	*18.7%*	*13.7%*	945	*52.5%*	*27.1%*	*17.6%*
Early Childhood Education	858	*66.3%*	*21.2%*	*10.6%*	8,808	*46.0%*	*21.8%*	*30.1%*
Plumbing	803	*64.8%*	*18.7%*	*13.4%*	180	*45.6%*	*43.3%*	*8.3%*
Commercial Heating & AC	736	*77.0%*	*8.4%*	*12.2%*	1,742	*43.6%*	*23.0%*	*29.5%*
Carpentry	486	*33.1%*	*32.5%*	*32.3%*	687	*47.6%*	*41.3%*	*9.6%*
Electrician	184	*64.1%*	*8.2%*	*26.6%*	51	*31.4%*	*35.3%*	*25.5%*
Building Maintenance	155	*32.3%*	*46.5%*	*18.1%*	393	*21.6%*	*52.7%*	*23.7%*
Commercial Foods & Culinary Arts	144	*61.8%*	*25.0%*	*11.1%*	2,014	*50.1%*	*29.7%*	*17.1%*
Firefighting	142	*88.0%*	*5.6%*	*4.9%*	1,234	*73.7%*	*8.7%*	*15.6%*
Heavy Duty Truck & Bus Mech	103	*66.0%*	*15.5%*	*15.5%*	216	*41.2%*	*26.9%*	*29.6%*

SOURCE: Department of Education, Data Reports on Enrollment

Appendix A - Table 3b
Enrollment in Selected Programs by Race/Ethnicity for Community College Apprentices and Non-Apprentices, 2000-01

Program	Apprenticeship				Vocational			
	Total	Percent White	Percent Afric.-Amer.	Percent Hispanic	Total	Percent White	Percent Afric.-Amer.	Percent Hispanic
Electricity	2,023	*74.5%*	*12.8%*	*8.2%*	231	*52.8%*	*23.4%*	*5.2%*
Commercial Heating & A/C	619	*76.6%*	*10.3%*	*9.2%*	425	*62.1%*	*22.4%*	*8.0%*
Carpentry	304	*59.5%*	*17.8%*	*15.8%*	108	*44.4%*	*32.4%*	*6.5%*
Machining	80	*82.5%*	*7.5%*	*8.8%*	89	*76.4%*	*6.7%*	*5.6%*
Child Care Center Operations	71	*84.5%*	*5.6%*	*4.2%*	298	*61.7%*	*18.1%*	*16.8%*

SOURCE: Division of Community Colleges

Appendix A - Table 4
Completion Rates for Selected Occupations, 1995 Cohort

Occupation	Total in Cohort	No. Completed	Percent Completed	Percent Completed or Still Registered
Electrician	1,245	332	26.7%	35.2%
Child Care Dev. Specialist	685	325	47.4%	49.2%
Plumber	379	81	21.4%	30.3%
Pipefitter	302	79	26.2%	47.7%
Heating & AC Install/Service	263	93	35.4%	39.2%
Carpenter	231	40	17.3%	26.8%
Sheet Metal Worker	183	34	18.6%	50.8%
Cook, Hotel & Rest	177	33	18.6%	44.1%
Maintenance Repair, Bldg	121	48	39.7%	41.3%
Structural-Steel	109	14	12.8%	48.6%
Top Ten Occupations	3,695	1,079	29.2%	39.9%

SOURCE: Apprenticeship Information Management System

Appendix A - Table 5
Completion Rates for Registered Apprentices
by Program Length, 1995 Cohort

Program Length	Total	Percent Completed	Percent Still Registered
One	19	52.6%	5.3%
Two	845	46.4%	2.0%
Three	614	31.3%	14.5%
Four	2,789	25.1%	10.9%

Source: Apprenticeship Information Management System

Appendix A - Table 6
Completion Rates for Registered Apprentices
by Credit Awarded Upon Indenture, 1995 Cohort

Credit Awarded	Total	Percent Completed	Percent Still Registered
None	3,049	25.2%	12.3%
Some	1,444	40.2%	6.0%

Source: Apprenticeship Information Management System

Appendix A - Table 7
Average Time to Completion by Program Length

Program Length (in Years)	Credit Received	No. Completed	Average Years
Two	None	1,196	2.42
	OJT	977	2.12
	Both	259	1.93
Three	None	1,075	3.99
	OJT	810	2.77
	Both	261	2.61
Four	None	3,973	4.53
	OJT	2,120	3.46
	Both	325	2.56

Source: Apprenticeship Information Management System

Appendix A - Table 8
Comparison of Headcount to Points Generated by the WDEFF for Apprenticeship and Other Vocational Programs

Institution	1999-00 Headcount		2001-02 WDEFF Points				
	Appr.	Adult Voc.	Appr. Comp. Pts	Adult Voc. Comp. Pts	Adult Voc. Placement Pts	App Pts per HDCT	Adult Voc. Pts per HDCT
DISTRICTS							
Broward	1,559	7,574	3,775	13,265	14,423	**2.4**	**3.7**
Citrus	32	869	40	967	2,395	**1.3**	**3.9**
Collier	215	1,288	305	1,775	2,795	**1.4**	**3.5**
Dade	942	15,542	2,683	18,378	19,810	**2.8**	**2.5**
Escambia	128	1,236	430	2,125	2,730	**3.4**	**3.9**
Flagler	128	463	430	297	1,290	**3.4**	**3.4**
Hillsborough	1,247	6,376	3,450	10,036	9,965	**2.8**	**3.1**
Lake	125	1,260	460	1,629	3,075	**3.7**	**3.7**
Lee	561	1,760	1,823	2,552	5,618	**3.2**	**4.6**
Leon	-	1,985	40	2,653	3,233	**-**	**3.0**
Manatee	229	1,536	1,208	2,177	3,123	**5.3**	**3.5**
Marion	32	972	120	995	1,873	**3.8**	**2.9**
Orange	1,325	7,624	5,475	10,875	12,213	**4.1**	**3.0**
Osceola	135	766	593	913	2,995	**4.4**	**5.1**
Pasco	114	779	510	464	575	**4.5**	**1.3**
Pinellas	664	4,610	3,430	8,907	10,230	**5.2**	**4.2**
Polk	237	1,637	355	2,825	4,605	**1.5**	**4.5**
St. Johns	39	1,612	125	2,103	3,433	**3.2**	**3.4**
Santa Rosa	95	487	330	680	750	**3.5**	**2.9**
Sarasota	333	1,102	1,380	1,903	3,800	**4.1**	**5.2**
TOTAL - District	8,140	59,478	26,960	85,518	108,928	**3.3**	**3.3**
COMMUNITY COLLEGES							
Brevard CC	439	1,044	680	1,940	4,210	**1.5**	**5.9**
Daytona Beach CC	294	1,187	865	1,412	2,848	**2.9**	**3.6**
Florida CC at Jax	844	3,842	130	3,275	10,805	**0.2**	**3.7**
Indian River CC	332	1,758	535	2,669	5,560	**1.6**	**4.7**
Palm Beach CC/ Palm Beach Co.	595	2,816	2,210	3,490	7,995	**3.7**	**4.1**
St. Johns River CC	159	402	590	278	1,295	**3.7**	**3.9**
Santa Fe CC	195	224	603	1,110	1,988	**3.1**	**13.8**
Seminole CC	662	1,677	1,395	1,637	4,745	**2.1**	**3.8**
South Florida CC	38	873	108	941	5,958	**2.8**	**7.9**
Tallahassee CC	35	104	-	761	983	**-**	**16.8**
Total - CC	3,593	11,603	7,115	17,511	46,385	**2.0**	**5.5**

APPENDIX B

METHODOLOGY

Appendix B – Methodology

Completion Rates

The Department of Education provided several files with data from the federal database known as the Apprenticeship Information Management System (AIMS). This file provided unit record information on registered apprentices in Florida from 1990 to 2001. The data on these files results from the entry of registration, cancellation and completion data, collected from program sponsors. This is the only database available to accurately examine completion, defined as the issuance of the state apprenticeship certificate.

The database did not contain the year in which an apprentice was indentured. Year of indenture was derived by using apprentice date of birth and age at indenture. Apprentices in federally registered programs were excluded. Reliable data was available for the 1990 through 1999 cohorts. Apprentices were divided into cohorts based on the year of indenture. Completion rates were calculated by dividing the total number of apprentices in the cohort by the number reported as completions.

Average Time-to-Completion

The AIMS databases were used for the calculation of average time to completion as well. Only apprentices who started and completed a program from 1990 to 2000 were included in the analysis. Apprentices in federally registered programs were excluded. For each apprentice, the number of years between the completion year and the estimated year of indenture was calculated.