

Earning industry certifications in high school:

Are there differences in participation and
outcomes?

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Industry certifications in Florida high schools

- Industry-recognized credentials have become increasingly important to attain a good job.
- Some states provide opportunities in high school for students to earn industry certifications, a sub-baccalaureate credential.
- Florida – Career and Professional Education (CAPE) Act –
 - Incentivizes and supports earning industry certifications
 - Supports earning certifications linked to key industries
 - Program offers wide variety of opportunities to earn job skills in high school
 - 29% of students in recent high school cohorts earned certifications

Variety of opportunities to explore job skills via certifications

Percentage of certifications earned in high school by cohorts of 9th grade students in 2012-13 and 2013-14, by career cluster, sorted by number of certifications earned

5 most prevalent career clusters	Career cluster	Number of certifications (percent)
	Arts, AV Technology & Communication	43,848 (42.95)
	Information Technology	21,248 (20.81)
	Health Science	13,404 (13.13)
	Hospitality & Tourism	7,593 (7.44)
	Architecture & Construction	5,535 (5.42)
	Agriculture, Food & Natural Resources	2,880 (2.82)
Additional career clusters	Engineering & Technology Education	2,574 (2.52)
	Business Management & Administration	1,627 (1.59)
	Transportation, Distribution & Logistics	1,450 (1.42)
	Education & Training	910 (0.89)
	Manufacturing	875 (0.86)
	Law, Public Safety & Security	154 (0.15)

SOURCE: Florida Department of Education, PK-20 Education Data Warehouse.

Do industry certifications influence educational attainment as well as job readiness?

For 2-year and 4-year programs,

- Does earning an industry certification in high school influence postsecondary enrollment and attainment?
- Are benefits associated with earning industry certifications consistent across career clusters?
- Does earning a certification have the same influence on postsecondary educational outcomes for subgroups of students based on gender, race, and poverty level?
- Is the timing of earning an industry certification (that is, whether it was earned early or later in one's high school career) associated with postsecondary educational outcomes?

Data

- Florida Department of Education – Education Data Warehouse
 - Indicates every student that earned that a certification and its associated career cluster.
- National Student Clearinghouse
 - College enrollment and degree attainment, 2-year and 4-year colleges
- Two cohorts of Florida first time 9th graders
 - Beginning high school in 2012-13, 2013-14
 - Limited to high school completers (n=243,500)
 - Complete high school data and 3 or 4 years of postsecondary data

Analytic approach

- People select into pursuing an industry certification.
- Propensity score matching approach using inverse probability weights (IPWs).
 - All results compare certification earners to (weighted) non-earners.
- People also select
 - Type of certification and timing of certification
 - Process may differ by demographic group.
- Repeated this process overall, by career cluster, by timing, by demographic group (gender, race/ethnic, economic status) - 16 iterations.
- Covariate balance - no single covariate in the weighed sample differing by more than 0.04 standard deviations between the treatment and comparison groups for any model.

Analytic approach, part 2

- Logistic regression - association between certification and postsecondary enrollment and degree attainment
 - Separately for 2 and 4-year colleges.
 - Enrollment within 3 years of high school completion
 - Degree attainment within 4 years of high school completion.
- Models comparing certification earners to non-earners include
 - Student measures: race, sex, free or reduced-price lunch, English language learner, gifted, physical/mental disability designation, high school coursetaking.
 - School measures: locale, charter, magnet, size, race/ethnic composition.

Certification earning

- Overall, 29% of students earned a certification
 - Gender - biggest between group difference: Male 30.8%; Female 27.0%
 - Race/ethnic groups within 2 percentage points of each other (28.1% – 30.0%)
 - Economic status – no real difference (29.0% – 28.8%)
 - Timing – big difference 12.6% of 9th and 10th graders; 20.4% of 11th and 12th graders.
 - Difference may reflect need for prerequisite courses.

Impact of certification earning by career cluster (top 5 clusters)

Career Cluster	Enrollment 2-yr		Enrollment 4-yr		Degree 2-yr		Degree 4-yr	
	Average marginal effect	p	Average marginal effect	p	Average marginal effect	p	Average marginal effect	p
Overall	0.1	0.808	6.2	0.000	3.2	0.035	3.5	0.030
Architecture & Construction	-1.4	0.308	8.8	0.000	2.4	0.040	2.0	0.054
Arts, AV Tech & Communication	0.9	0.163	4.0	0.000	2.1	0.000	1.9	0.000
Health Science	3.6	0.002	9.4	0.000	7.5	0.000	4.9	0.000
Hospitality & Tourism	1.0	0.287	-0.7	0.465	3.8	0.000	-1.6	0.016
Information Technology	-1.4	0.124	6.7	0.000	3.0	0.000	4.6	0.000

Impact of certification earning by student demographic characteristics

Demographic characteristic	Enrollment 2-yr		Enrollment 4-yr		Degree 2-yr		Degree 4-yr	
	Average marginal effect	p	Average marginal effect	p	Average marginal effect	p	Average marginal effect	P
Overall	0.1	0.808	6.2	0.000	3.2	0.035	3.5	0.030
Female	-0.8	0.195	7.0	0.000	4.2	0.000	3.9	0.000
Male	0.8	0.150	5.4	0.000	2.7	0.000	2.2	0.000
Black	0.2	0.766	5.6	0.000	3.3	0.000	2.8	0.000
Hispanic	0.1	0.885	6.0	0.000	3.9	0.000	2.0	0.000
White	-0.1	0.935	6.5	0.000	3.0	0.000	3.6	0.000
Other	-1.8	0.120	7.5	0.000	4.0	0.002	4.3	0.000
Econ. Disadvantaged	1.2	0.020	5.6	0.000	4.4	0.000	2.6	0.000
Not econ. Disadvantaged	-1.8	.006	7.0	0.000	2.1	0.001	3.6	0.000

Impact of certification earning by timing of certification

		Enrollment 2-yr		Enrollment 4-yr		Degree 2-yr		Degree 4-yr	
Certification timing			Average marginal effect		Average marginal effect		Average marginal effect		Average marginal effect
		p		p		%			
Overall									
Grades 9 & 10		-3.5	0.000	9.0	0.000	2.4	0.000	4.8	0.000
Grades 11 & 12		2.4	0.000	3.5	0.000	3.6	0.000	1.5	0.000

Conclusion

- Industry certifications designed to teach job skills - and also have educational benefits.
- In general, certifications are associated with enrolling in 4-year college and attaining 2-year or 4-year degree.
 - Those planning for 2-year college may not think they need to earn certification.
 - In 2 or 4-year college, certifications may have helped students prepare academically – and better focus on their career goals.
- Economically disadvantaged students have a different certification pathway than advantaged students. More advantaged students may not want middle skill jobs.
- Timing of certification – early earners may have distinctive reasons for getting certifications than later earners. These groups do not earn quite the same set of certifications.

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