Measuring Education Credentials Of Middle-Skill Jobs Gulf Coast Region

Background

The ability to fill the workforce needs of local employers in the Gulf Coast Region has always been a high priority. Workforce demands are constantly undergoing transformations and occupations are increasingly using sophisticated technology driving the necessity for a bettter educated and skilled workforce. Over the last several years there has been an increasing number of studies on the demand and importance of middle-skilled jobs. The rising numbers of individuals approaching retirement age has only heightened awareness of the region's need to meet workforce demands both now and in the future.

Studies on middle-skill credentials have generally been limited largely due to a lack of ability to track the numerous sources of information, in particular when it comes to privately issued certifications. This report provides a review of occupations by skill level followed by some insight on tracking postsecondary credentials.

Middle-Skill Jobs

Most studies generally define middle-skill jobs as those requiring some education and training beyond a high school diploma but less than a four-year baccalaureate degree. This postsecondary learning may include college coursework, two-year associate's degrees, certificates, on-the-job training, or apprenticeships. The Bureau of Labor Statistic's typical education, experience, and training requirments by occupation were used to estimate workforce demands in the Gulf Coast Region by skill level. We divided occupations into three categories—low-skill, middle-skill, and high-skill—and examined their respective changes in shares of total employment and shares of projected job openings for three periods: 2000 to 2010, 2010 to 2020, and 2020 to 2030.

- Low-skill occupations – those with requirements up to and including a high school diploma and short-term on-the-job training
- Middle-skill occupations – those with requirements of an associate's degree or high school diploma and one of the following
    - Moderate-term on-the-job training
    - Long-term on-the-job training
    - Apprenticeship
    - One year or more experience in a related occupation
    - Some college, no degree
    - Postsecondary non-degree award
- High-skill occupations – those with requirements of a bachelor's degree or higher

The Future and Occupations by Skill Level

As of 2020, there were roughly 1,051,000 middle-skill jobs in the Gulf Coast Region with employers needing to fill some 130,000 openings annually to meet growth and replacement demand.

- By 2030, 61.2 percent of all jobs will require some kind of postsecondary education and training.
- By 2030 the number of middle-skill jobs in the Gulf Coast Region is projected to rise to 1,220,820 representing a 16.1% growth rate over ten years.
- Through 2030, approximately 51.4 percent of all job openings, due to growth and replacement, will require education or training beyond high school of which 62.0 percent will be middle-skill jobs.
    - Low-skills jobs will represent 48.6 percent of job openings, 197,660 annual openings
    - Middle-skills jobs will represent 31.9 percent of job openings, 129,765 annual openings
    - High-skills jobs will represent 19.6 percent of job openings, 79,600 annual openings
- By 2030, approximately 61.2 percent of all jobs in the Gulf Coast Region will require education or training beyond high school of which 56.6 percent will be middle-skill jobs.
    - Low-skills jobs will represent 38.8 percent of all jobs or 1,367,056
    - Middle-skills jobs will represent 34.6 percent of all jobs or 1,220,820
    - High-skills jobs will represent 18.8 percent of all jobs or 937,577
- Middle-skill jobs paid an average 65.6 percent higher than low skill jobs in 2021.
    - Hourly mean wage for low-skill jobs was $15.65
    - Hourly mean wage for middle-skill jobs was $25.91
    - Hourly mean wage for high-skill jobs was $48.66
- Low skill wages experienced the highest percentage increase from 2011 to 2021. The pandemic influenced low skill wages most profoundly in 2021.
    - Hourly mean wage for low-skill jobs increased by 20.0 percent from 2015 to 2021
    - Hourly mean wage for middle-skill jobs increased by 8.9 percent from 2015 to 2021
    - Hourly mean wage for high-skill jobs increased by 2.1 percent from 2015 to 2021

Results - Key Finding

The business cycle appears to have influenced the supply and demand for workers of various skill levels, which in turn influenced the changes in proportions observed as seen in the chart on the next page.

Gulf Coast Region
Occupations by Skill Level

Category	2000 to 2010 Projections 2000	2010	Number Growth	Percent Growth	Percent of 2000 Employment	Percent of 2010 Employment	Percent of 10 Year Growth	Annual Openings Growth	Repl.	Total	Percent of Annual Openings
Low Skill Occupations	1,034,240	1,216,650	182,410	17.6%	40.9%	40.5%	38.4%	18,920	29,935	48,855	45.1%
Middle Skill Occupations	905,290	1,060,610	155,320	17.2%	35.8%	35.3%	32.7%	15,700	18,510	34,210	31.6%
High Skill Occupations	592,080	729,830	137,750	23.3%	23.4%	24.3%	29.0%	13,935	11,260	25,195	23.3%
Total	2,531,610	3,007,090	475,480	18.8%	100.0%	100.0%	100.0%	48,555	59,705	108,260	100.0%

Category	2010 to 2020 Projections 2010	2020	Number Growth	Percent Growth	Percent of 2010 Employment	Percent of 2020 Employment	Percent of 10 Year Growth	Annual Openings Growth	Repl.	Total	Percent of Annual Openings
Low Skill Occupations	1,183,110	1,446,610	263,500	22.3%	41.7%	41.5%	40.9%	26,635	31,125	57,760	44.1%
Middle Skill Occupations	1,065,780	1,285,660	219,880	20.6%	37.5%	36.9%	34.1%	22,070	22,360	44,430	33.9%
High Skill Occupations	589,590	750,610	161,020	27.3%	20.8%	21.6%	25.0%	16,080	12,745	28,825	22.0%
Total	2,838,480	3,482,880	644,400	22.7%	100.0%	100.0%	100.0%	64,785	66,230	131,015	100.0%

Category	2020 to 2030 Projections 2020	2030	Number Growth	Percent Growth	Percent of 2020 Employment	Percent of 2030 Employment	Percent of 10 Year Growth	Annual Openings Growth	Total Annual Transfers and Exits[1,2]	Total	Percent of Annual Openings
Low Skill Occupations	1,158,759	1,367,056	208,297	18.0%	38.6%	38.8%	39.6%	20,830	176,830	197,660	48.6%
Middle Skill Occupations	1,051,524	1,220,820	169,296	16.1%	35.1%	34.6%	32.2%	16,928	112,837	129,765	31.9%
High Skill Occupations	789,082	937,577	148,495	18.8%	26.3%	26.6%	28.2%	14,856	64,744	79,600	19.6%
Total	2,999,365	3,525,453	526,088	17.5%	100.0%	100.0%	100.0%	52,614	354,411	407,025	100.0%

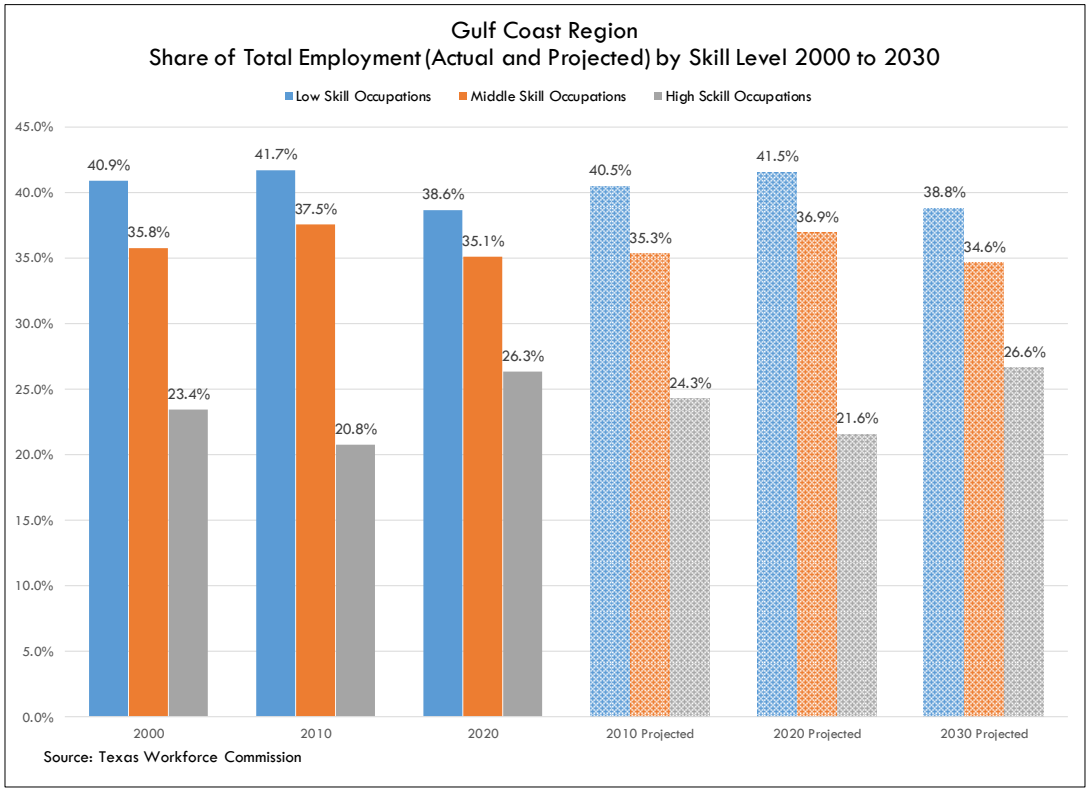
Category	2011 OES Wages Mean Wage	Entry Wage	Experienced Wage	2015 OES Wages Mean Wage	Entry Wage	Experienced Wage	2011 to 2015 Percent Increase in Mean	2021 OES Wages Mean Wage	2015 to 2021 Percent Increase in Mean	2011 to 2021 Percent Increase in Mean
Low Skill Occupations	$ 12.42	$ 9.10	$ 14.08	$ 13.04	$ 9.32	$ 14.90	5.0%	$15.65	20.0%	26.0%
Middle Skill Occupations	$ 23.03	$ 14.84	$ 27.13	$ 23.79	$ 14.72	$ 28.32	3.3%	$25.91	8.9%	12.5%
High Skill Occupations	$ 45.66	$ 26.24	$ 55.37	$ 47.66	$ 27.59	$ 57.69	4.4%	$48.66	2.1%	6.6%

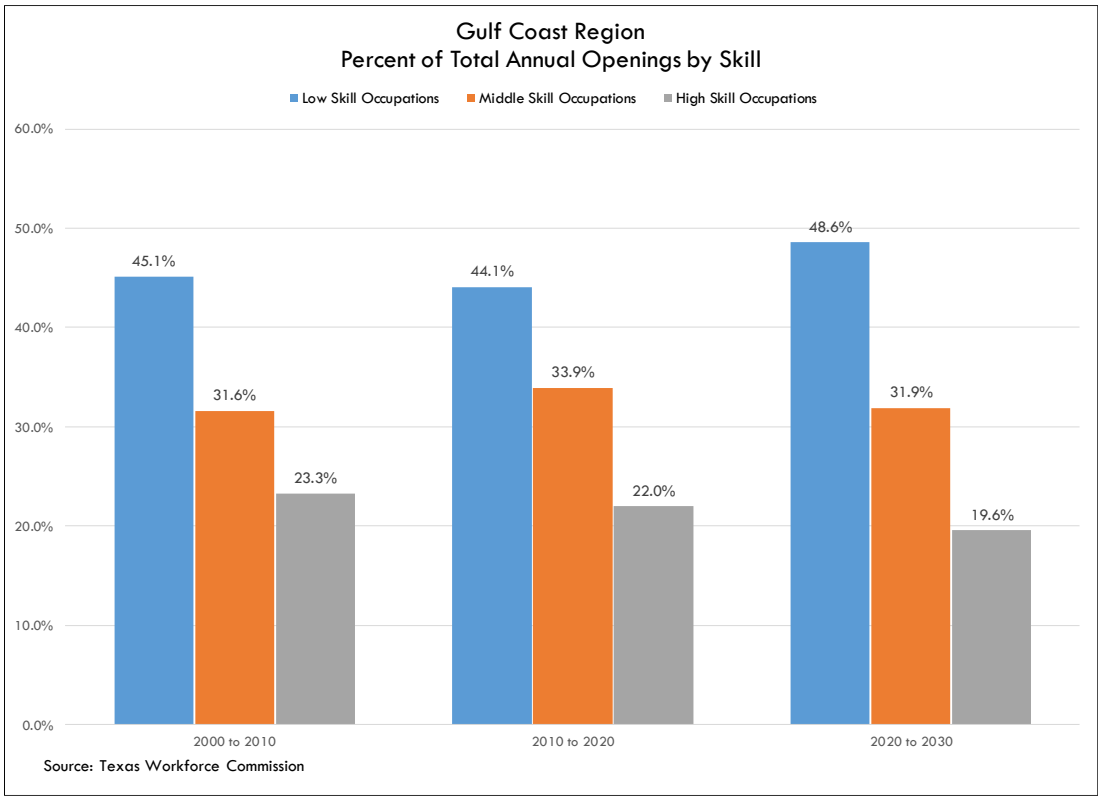
1. Methodology for calculating annual job openings were changed with the release of 2016 to 2026 projections with a new set of definitions. The new methodology resulted in a larger number of annual openings. The use of new methodology places a break in the data series making comparison of annual openings with prior projections not applicable.

2. Occupational transfers are the projected number of workers leaving an occupation and transferring to a different occupation. Transfers represent permanent separations from an occupation, not temporary movements where the worker is expected to return to the same occupation in the future.

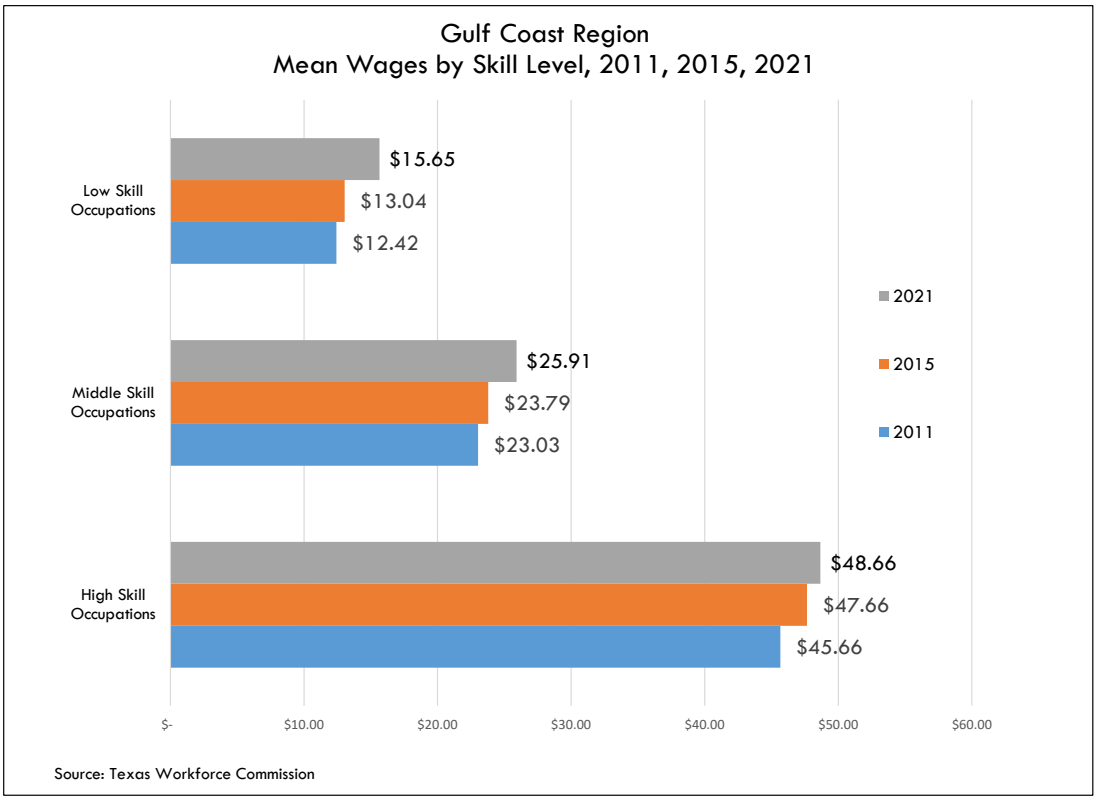
3. Labor force exits are the projected number of workers leaving an occupation and exiting the labor force entirely. Labor force exits are more common at older ages as workers retire, but can occur at any age. Labor force exits are not necessarily permanent exits from the labor force; for example, some workers exit the labor force to pursue additional education with the intention of returning to the labor force. They do represent permanent separations from an occupation.

Note: Source TWC LMCI Dept. For several occupations where wages were not available data was estimated based on other sources (JobsEQ, EMSI, TWC Statewide Data)





Source: Texas Workforce Commission



Source: Texas Workforce Commission

Measuring Workforce Credentials - Middle-Skill Occupations

Data Sources and Limitations

National Center for Education Statistics (NCES)

The NCES operates several databases that gather and report on educational statistics. One report that we currently use to track certificate and award completions is the Integrated Postsecondary Education Data System (IPEDS), which gathers data from every postsecondary educational, technical, and vocational institution in the nation that participates in any federal student aid program. This data set is the most inclusive available however, since it does not track privately issued credentials aggregates derived represent a very conservative estimate of middle skill credentials issued in the Gulf Coast Region during any given time-frame.

Texas Higher Education Coordinating Board (THECB)

The THECB also tracks certificate and award completions. The data is the same as provided by IPEDS and can be found at their website as part of the Perkins Core Indicator Data set. The limitations to data from THECB are:

- Lacks the ability to make a distinction between each type of credential earned
- Does not provide data from the many private educational, technical, and vocational institutions that is available when using IPEDS

Degrees, Certifications, and Award Completions – Results

According to available data from the National Center for Educational Statistics, during the 2020 to 2021 academic year, there were 42,299 middle-skill degrees and certifications awarded in the Gulf Coast Region. This was the largest number of middle-skill degrees and certifications awarded since our study began in the 2008 to 2009 academic year. The 2020 to 2021 middle-skill degrees and certifications awarded represented a 57.4 percent increase from 25,216 awarded during the 2008 to 2009 academic year. **The pandemic greatly affected completions in the 2019 to 2020 academic year with the number of middle-skill degrees and certifications awarded falling by 1,656 or 4.0 percent.**

- By the 2020 to 2021 academic year, the number of associate degrees awarded experienced the strongest growth of the three categories of middle-skill awards, up 13,591 or 131.5 percent from the 2008 to 2009 academic year.
    - The number of associate degrees experienced their largest single year growth in the 2015 to 2016 academic year, up 3,132 or 16.3 percent during the U.S. shale bust as energy related jobs were experiencing a substantial decline.
    - **The number of associate degrees experienced their largest single year decline in the 2019 to 2020 academic year, down by 510 or 2.1 percent.**

- The number of certifications awarded for at least 1 but less than 2 academic years experienced the second largest growth from the 2008 to 2009 academic year to the 2020 to 2021 academic year, up 2,732 or 44.6 percent.
    - Most of the expansion was during the 2010 to 2011 academic year, during the tail end of the Great Recession, when the number of certifications awarded for at least 1 but less than 2 academic years experienced a 49.4 percent increase, up 3,440.
    - Over a four-year period during the shale booom, the number of certifications awarded for at least 1 but less than 2 academic years was negatively impacted during rapid economic growth experiencing a 24.1 percent decline, down 2,509.
    - **The number of certifications awarded for at least 1 but less than 2 academic years declined by 109 or 1.4 percent in the 2019 to 2020 academic year.**
- The number of certifications awarded for less than one academic year experienced the smallest growth from the 2008 to 2009 academic year to the 2020 to 2021 academic year, up 760 or 8.7 percent.
    - Over a three year period during the shale boom, the number of certifications awarded for less than 1 academic year was negatively impacted during rapid economic growth experiencing a 22.5 percent decline, down 1,967
    - **The number of certifications awarded for less than 1 academic year declined by 1,037 or 10.9 percent in the 2019 to 2020 academic year.**

Results - Key Finding

The number of certifications issued below the level of an associate degree are more volatile during times of economic expansion and contraction in the region depending on the availability of easy access jobs. As a result, the number of middle-skill awards and certifications awarded as a percentage of all levels of awards and certifications declines during economic expansion and rises during economic contraction.

Gulf Coast Region
Total Middle-Skill Degrees/Certificates

	08 to 09	09 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21
Associate's degree	10,338	12,307	13,416	15,570	15,653	16,475	19,260	22,392	23,353	23,286	23,851	23,341	23,929
Less than 1 academic year	8,759	10,189	8,518	6,832	6,673	6,792	7,101	7,245	7,898	8,399	9,486	8,449	9,519
At least 1 but less than 2 academic years	6,119	6,960	10,400	9,850	9,056	8,658	7,891	8,299	8,721	7,754	8,016	7,907	8,851
Total middle-skill degrees/certificates	25,216	29,456	32,334	32,252	31,382	31,925	34,252	37,936	39,972	39,439	41,353	39,697	42,299
Grand Total	52,357	56,299	60,427	61,249	62,046	63,511	67,081	71,178	73,069	73,825	75,301	74,559	78,543
Percentage of Total Degrees/Certificates	48.2%	52.3%	53.5%	52.7%	50.6%	50.3%	51.1%	53.3%	54.7%	53.4%	54.9%	53.2%	53.9%

Growth (Decline) From Previous Academic Year

	09 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21
Associate's degree	1,969	1,109	2,154	83	822	2,785	3,132	961	(67)	565	(510)	588
Less than 1 academic year	1,430	(1,671)	(1,686)	(159)	119	309	144	653	501	1,087	(1,037)	1,070
At least 1 but less than 2 academic year	841	3,440	(550)	(794)	(398)	(767)	408	422	(967)	262	(109)	944
Total middle-skill degrees/certificates	4,240	2,878	(82)	(870)	543	2,327	3,684	2,036	(533)	1,914	(1,656)	2,602
Grand Total	3,942	4,128	822	797	1,465	3,570	4,097	1,891	756	1,476	(742)	3,984

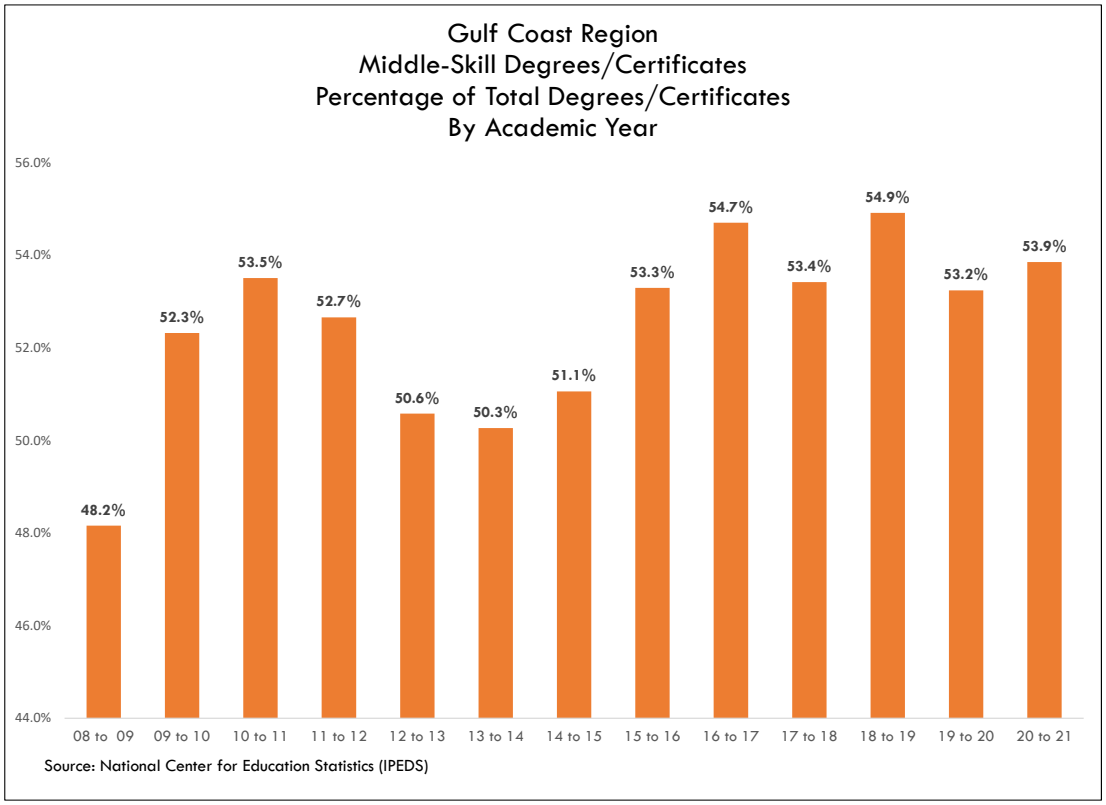
Percent Growth (Decline) From Previous Academic Year

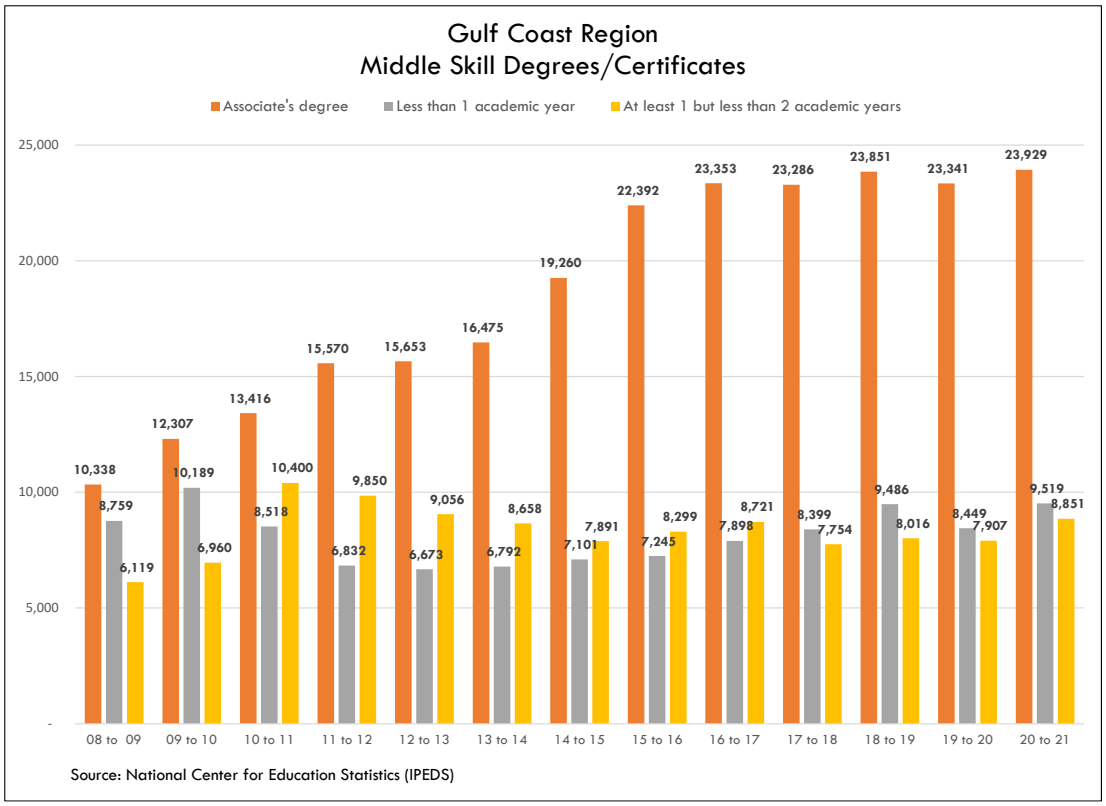
	09 to 10	10 to 11	11 to 12	12 to 13	13 to 14	14 to 15	15 to 16	16 to 17	17 to 18	18 to 19	19 to 20	20 to 21
Associate's degree	9.0%	16.1%	0.5%	5.3%	16.9%	16.3%	4.3%	-0.3%	2.4%	-2.1%	2.5%	
Less than 1 academic year	-16.4%	-19.8%	-2.3%	1.8%	4.5%	2.0%	9.0%	6.3%	12.9%	-10.9%	12.7%	
At least 1 but less than 2 academic year	49.4%	-5.3%	-8.1%	-4.4%	-8.9%	5.2%	5.1%	-11.1%	3.4%	-1.4%	11.9%	
Total middle-skill degrees/certificates	9.8%	-0.3%	-2.7%	1.7%	7.3%	10.8%	5.4%	-1.3%	4.9%	-4.0%	6.6%	
Grand Total	7.3%	1.4%	1.3%	2.4%	5.6%	6.1%	2.7%	1.0%	2.0%	-1.0%	5.3%	

Growth (Decline) 2008 to 2009 School Year to 2020 to 2021 School Year

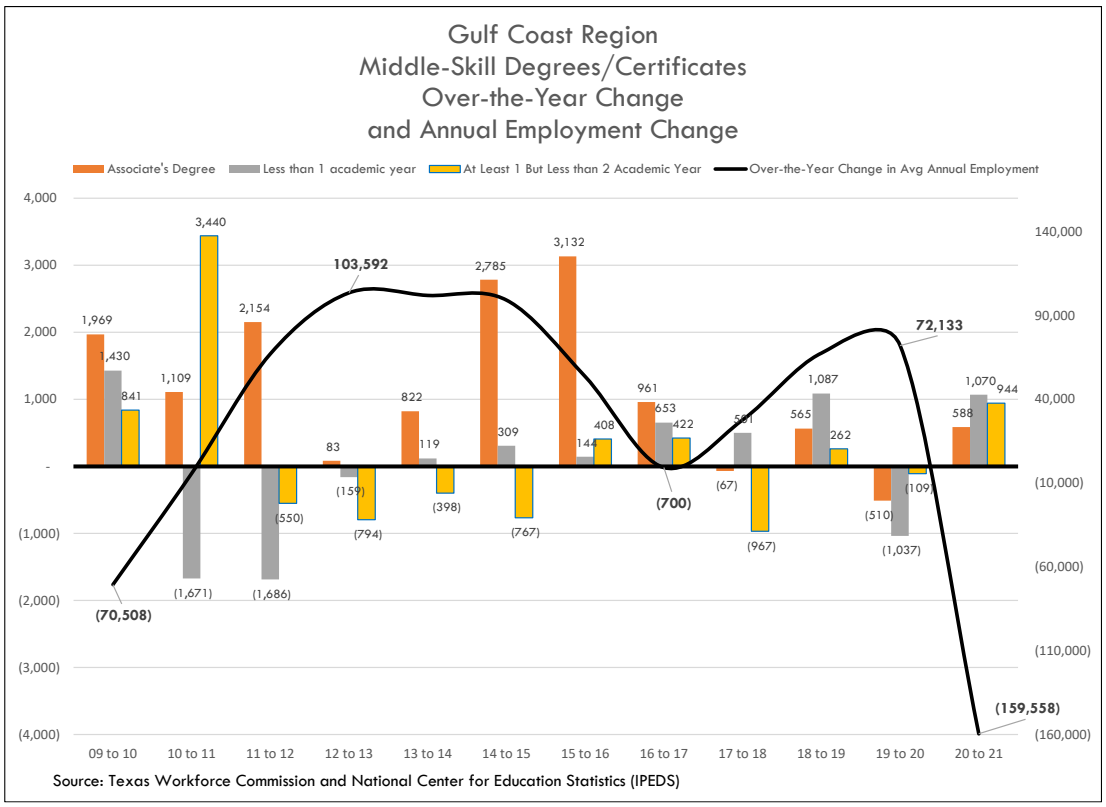
	08 to 09	20 to 21	Number Change	Percent Change
Associate's degree	10,338	23,929	13,591	125.8%
Less than 1 academic year	8,759	9,519	760	-3.5%
At least 1 but less than 2 academic year	6,119	8,851	2,732	29.2%
Total middle-skill degrees/certificates	25,216	42,299	17,083	57.4%
Grand Total	52,357	78,543	26,186	42.4%
Percentage of Total Degrees/Certificates	48.2%	53.9%		5.7%

Source: NCES (IPEDS)





Source: National Center for Education Statistics (IPEDS)



Source: Texas Workforce Commission and National Center for Education Statistics (IPEDS)