

**Time to Completion and Credit Hours Earned by Graduation
For Developmental and College-Ready Students**

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Office of Planning and Institutional Research



Executive Summary

An analysis was conducted to determine whether time to completion and credit hours earned by graduation vary for TCC graduates who took developmental education courses and those who did not. In addition, the total number of credit hours earned by students as of the term in which they graduated was examined. Because time to completion and credit hours earned by graduation vary based on enrollment status, analyses also included an examination of whether any differences between developmental and college-ready students varied for full- and part-time students. Finally, to provide a more accurate evaluation of time to completion and credits earned by graduation, analyses were conducted separately for three categories of credentials earned by TCC students in 2011-2012: Associate degrees, certificate programs between one and two years in length, and certificate programs less than one year in length.

Sample

The analysis included all students who graduated from TCC during the 2011-2012 reporting year (i.e., Summer 2011, Fall 2011, and Spring 2012). A total of 2,437 students earned 2,618 credentials (2,250 Associate Degrees and 368 Certificates) during 2011-2012 and each credential was used as the level of analysis, such that students who earned more than one credential in that year were included more than once in analysis. Credential was used for analysis because a primary variable of interest (i.e., time to completion) pertains to how long it takes a student to complete a particular credential and this may vary for different credentials completed by the same student. Final analyses included only the credentials earned by students who had not earned an award prior to 2011-2012 (N = 1,868, or 71.4%, of 2,618 total credentials). This criterion was used to capture more accurate values for time to completion and credit hours earned by graduation for the credentials included in the present analysis.

Outcomes

There were two dependent variables for this analysis (see Table 1 for descriptive statistics):

- 1) *Time to completion*: this variable was defined as the number of years between a student's first semester at TCC and the semester during which they earned a particular credential (within a given year, possible values were .33 of year = 1 semester, .67 of year = two semesters, and 1 full year = three semesters). For example, the time to completion value for a student who graduated in Spring 2012 and first started at TCC in Fall 2010 is 1.67 years, or five semesters.
- 2) *Credit hours earned by completion*: this variable was defined as the total number of credit hours earned by the term in which the student graduated.

The primary independent variable of interest was whether or not students attempted at least one developmental education course at TCC since their first semester at the College. This variable, *developmental status*, consisted of two groups: awards earned by developmental students (N = 1,164, or 44.5%, of 2,618 total credentials) and those earned by college-ready students (N = 1,454, or 55.5%, of 2,618 credentials). Additionally, the differences between these two groups on the two outcomes were examined separately for full- and part-time students (based on their first semester enrollment status).

Table 1. Means and Standard Deviations on Outcomes for All Completions (No Awards Prior to 2011-2012).

Credential	Total Completions	Mean	Median	Standard Deviation
Time to Completion (Years to Graduation)				
Associate Degree	1,632	6.37	4.00	6.18
Certificate 1-2 Years	135	5.47	2.67	6.95
Certificate < 1 Year	101	6.06	2.67	8.15
Credit Hours Earned by Graduation				
Associate Degree	1,632	86.03	75.00	31.66
Certificate 1-2 Years	135	58.36	51.00	42.91
Certificate < 1 Year	101	59.22	53.00	46.41

Results

As noted above, separate analyses were conducted for the three different types of credentials offered by TCC: Associate degrees, certificates between one and two years in length, and certificates less than one year in length. Findings for each type of credential are presented below.

Associate Degrees

A Two-Way Multivariate Analysis of Variance (MANOVA) was conducted with time to completion and credits earned by graduation as the multiple dependent variables and developmental status and enrollment status (full- or part-time) as the two independent variables. Results for Associate degrees revealed that developmental students (M = 7.24 years, SD = 6.66 years) took significantly longer than college-ready students (M = 5.70 years, SD = 5.70) years to complete their degrees. Interestingly, findings also showed that developmental students (M = 78.59, SD = 23.58) graduated with significantly fewer credit hours than

did college-ready students ($M = 91.75$, $SD = 35.64$). These differences were similar for full- and part-time students. These differences were similar for both full- and part-time students.

Because the outcome variables were fairly skewed, resulting in means pulled in the direction of outliers, nonparametric tests were also conducted on medians to further determine if there were any differences between the groups. These tests revealed that the differences between the medians of developmental students ($Mdn = 4.33$ for years to graduate and $Mdn = 70.00$ for credits earned) and college-ready students ($Mdn = 3.67$ for years to graduate and 80.00 for credits earned) were also statistically significant, respectively, for students earning an Associate degree.

Certificates of 1-2 Years

As with degrees, a Two-Way Multivariate Analysis of Variance (MANOVA) was conducted for certificates of 1-2 years with time to completion and credits earned as the two dependent variables and developmental status and enrollment status as the independent variables. Results revealed a statistical interaction between developmental status and enrollment status for time to completion. Specifically, the difference between developmental and college-ready students was significant only for part-time students. Indeed, part-time students who attempted at least one developmental course ($M = 6.44$, $SD = 7.08$) took significantly longer to complete their certificates than did college-ready part-time students ($M = 3.61$, $SD = 4.25$).

As regards credits earned, overall results combining full- and part-time students showed that developmental students ($M = 47.42$, $SD = 27.28$) earned fewer credits by graduation than college-ready students ($M = 70.87$, $SD = 53.19$). However, when examined as a function of enrollment status, the difference between developmental and college-ready students on credit hours earned was significant for part-time, but not full-time, students. Of those part-time students, developmental students ($M = 46.26$, $SD = 29.59$) graduated with significantly fewer credit hours than did college-ready students ($M = 78.99$, $SD = 58.67$).

For certificates of 1-2 years, nonparametric tests showed that the differences between the medians of developmental students ($Mdn = 2.67$ for years to completion and $Mdn = 42.00$ for credits earned) and college-ready students ($Mdn = 2.67$ for years to completion and $Mdn = 63.00$ for credits earned) were not statistically significant.

Certificates of Less Than 1 Year

As was done for the other credentials, a Two-Way Multivariate Analysis of Variance (MANOVA) was conducted for certificates of less than one year with time to completion and credits earned as the outcome variables and developmental status and enrollment status as the two independent variables. Findings demonstrated that the differences between developmental and college-ready students were not significantly different for either time to completion and credits earned by graduation.

Moreover, for certificates of less than one year, nonparametric tests showed that the differences between the medians of developmental students ($Mdn = 2.67$ for years to completion and $Mdn = 51.50$ for credits

earned) and college-ready students (Mdn = 2.33 for years to completion and Mdn = 58.00 for credits earned) were not statistically significant.

Table 2. Means and Standard Deviations on Outcomes for Developmental and College-Ready Students (No Awards Prior to 2011-2012).

Credential	Developmental Students		College-Ready Students		p-value*
Time to Completion (Years to Graduation)					
Associate Degree	N = 709	M = 7.24 (SD = 6.66)	N = 923	M = 5.70 (SD = 5.70)	< .001
Certificate 1-2 Years	N = 72	M = 6.03 (SD = 7.68)	N = 63	M = 4.83 (SD = 6.00)	.87
Certificate < 1 Year	N = 46	M = 6.10 (SD = 8.50)	N = 55	M = 6.02 (SD = 7.92)	.85
Credit Hours Earned by Graduation					
Associate Degree	N = 709	M = 78.59 (SD = 23.58)	N = 923	M = 91.75 (SD = 35.64)	< .001
Certificate 1-2 Years	N = 72	M = 47.42 (SD = 27.28)	N = 63	M = 70.87 (SD = 53.19)	.02
Certificate < 1 Year	N = 46	M = 47.83 (SD = 27.83)	N = 55	M = 68.75 (SD = 56.04)	.08

* Statistically significant differences highlighted in green.

Conclusions

The present findings suggest that students who attempt at least one developmental education course at TCC generally take longer to complete their Associate degrees than do students who have not attempted a developmental course. However, some other findings are noteworthy in regards to this difference. Developmental students did not take any longer to complete certificates of less than one year and they only took longer to complete certificates of 1-2 years among part-time students. Moreover, developmental students graduated with Associate degrees and certificates of 1-2 years with fewer credit hours than did college-ready students. It will be important for stakeholders to consider these and many other pieces of evidence when evaluating the present findings.