POLICY BRIEF:

Pathways to Academic and Career Success: Understanding Texas High School Students' Choice of Endorsements

by Maria Trache and Yi (Leaf) Zhang

SUMMARY

To support youths' early motivation for higher education and careers, the Texas Legislature passed House Bill 5 in 2013 to adopt a new foundation high school program, which allows students to pursue endorsements as they begin 9th Grade. Endorsements prepare high-school students for specific STEM, business, public service, arts and humanities, and multidisciplinary career pathways.

The purpose of this policy brief is to present preliminary research findings showing the extent to which Texan students take advantage of endorsement opportunities and whether pathways chosen are differentiated by individual characteristics. Findings show patterns of academic and vocational endorsement pathways that are differentiated by socio-demographic factors (i.e., gender, race/ethnicity, socio-economic status).

Study Overview

Context and Importance of the Problem

Texas Higher Education Coordination Board [1] first adopted the *Closing the Gaps by 2015* policy to reduce the gap between the numbers of college-going students in Texas; this policy continues now with the *60x30TX* strategic plan that proposes that 60% of young adults (25-34 years-old) will complete some post-secondary education credentials by 2030.[2] To support youth early motivation to pursue higher education and choose future careers, Texas K-12 education system has recently adopted a new Foundation High School Program for graduation that includes enrollments in specific endorsement pathways. In addition to 22-credits that represent the core of the Texas high-school diploma, students can customize their program by taking four more credits to obtain endorsements in STEM, Business and Industry, Public services, Arts and Humanities, or Multidisciplinary programs. It is expected that focused endorsement pathways would encourage students to gain in-depth knowledge in particular subject areas and pursue their academic and career interests as soon as they enter high school.[3] As recommended by research,[4] the endorsements could also contribute to the alignment of coursework and assessments between K-12 and post-secondary education.

Despite these benefits, equity issues may arise if students' enrolment in specific endorsement pathways is largely controlled by socio-demographic and academic factors. For instance, there has been concern among researchers that some forms of curriculum tracking within-school may increase educational inequality,[5] while supporters of "tracking" focused on productivity and noticed that in fact tracking is replaced by alternative forms of sorting (e.g., school choice, differential instruction). [6] In their review paper, Kao and Thompson [7] discussed how course-taking and academic tracking contribute to the racial and ethnic stratification, especially throughout public secondary schooling. Considering potential differences in students' ability to make curriculum choices, it is important to know whether and to what extent Texas endorsement program maintains the educational equality among all students.

This quantitative study is based on statewide restrictive data available at UT Austin Education Research Centre to examine differences in the endorsement enrollments of 9th graders in the 2015/16 academic year by student socio-demographic characteristics (i.e., sex, race/ethnicity, socio-economic status, immigrant status) and school programs (i.e., LEP, ESL, special education, gifted, CTE).

Key Findings

About 4.1% of all 406,030 students enrolled in Grade 9 in 2015/16 and recorded in the endorsement file did not choose any endorsement (i.e., students are allowed to opt out of the endorsement programs). Other 85% chose one endorsement and 9.1% chose two or more endorsements. The popularity of endorsements indicates interests in Multi-disciplinary (31.4%), Business & Industry (25.5%), Public Service (22.4%), STEM (16.1%), and Arts & Humanities (14.2%) programs (because students enrolled in more than one program, percentages add up to more than 100%). About two-thirds of students in each endorsement group are pursuing or have achieved a Distinguished Level of Achievement to the benefit of automatic admission to a TX public university under the Top 10% Rule.

Enrollment in each endorsement pathway is associated with various student factors (i.e., demographic characteristics, socio-economic status, and programs supporting these students) as shown in Table 1. For instance, gender differences in endorsement choices reveal that compared to *all* students' enrolment rates, female students have higher rates for Public Service and Arts & Humanities, and lower rates for STEM and Business & Industry. The opposite happens for male students who have higher enrolment rates in STEM and Business & Industry endorsements.

STEM
Male, Asian, White, and Multiracial students, as well as the economically advantaged, not at risk and gifted students have enrollment rates in STEM endorsement much higher than the average rate of 16.1%. CTE status does not appear to associate with the STEM endorsement choice.

Business and Industry
Enrolment rates are higher than average for male, African American, Hispanic and American Indian students, as well as the economically disadvantaged, LEP, ESL, and at-risk students. As expected, students in coherent CTE programs chose business endorsements.

Public Service
Enrolment rates are higher than average for female, Hispanic students, as well as the economically disadvantaged, LEP, ESL, Special education and at-risk students. As expected, students in coherent CTE programs also chose public service endorsements.

Arts and Humanities
Enrolment rates are higher than average for female, multiracial students, as well as gifted students and those who do not receive any CTE instruction.

Multidisciplinary
Enrolment rates are higher than average White, Asian and Multiracial students, those who are not economically disadvantaged or at risk. Gifted and special education students have higher enrolment rates in multidisciplinary, as well as those who do not receive any CTE instruction.

Table 1.
Endorsement choices by student factors (row %)*

	STEM (%)	Business & Industry (%)	Public Service (%)	Arts & Humanities (%)	Multi-disciplinary (%)	N
All	16.1	25.5	22.4	14.2	31.4	406,030
Gender						
Female	12.1	18.4	31.0	18.2	31.4	195,672
Male	19.9	32.2	14.5	10.6	31.4	210,358
Race/ethnicity						
African American	12.2	27.1	22.2	13.2	28.3	51,227
American Indian	15.9	26.6	20.0	13.2	29.6	1,638
Asian	35.7	13.1	18.7	13.4	36.0	16,126
Hispanic	14.2	27.0	26.1	14.4	27.2	210,323
Multiracial	17.8	21.8	18.7	16.1	36.2	7,334
Pacific Islander	15.0	25.0	22.8	13.8	28.1	580
White	18.6	24.1	16.9	14.4	39.2	118,802
Economically Disadvantaged						
Yes	13.0	28.1	25.5	14.0	27.2	226,157
No	20.1	22.3	18.6	14.6	36.3	179,873
Immigrant Status						
Yes	11.1	25.0	19.2	13.4	32.8	8,741
No	16.3	25.5	22.5	14.3	31.3	397,289
Limited English Proficiency (LEP)						
Yes	11.8	29.3	25.0	12.8	25.8	53,299
No	16.8	24.9	22.0	14.5	32.2	352,731
English as a Second Language (ESL)						
Yes	10.6	29.6	24.3	12.5	26.3	39,257
No	16.7	25.1	22.2	14.4	31.9	366,773
Special Education						
Yes	7.2	28.6	18.5	12.2	34.2	35,749
No	17.0	25.2	22.8	14.4	31.1	370,281
Gifted						
Yes	32.3	17.5	18.3	17.1	34.1	36,878
No	14.5	26.3	22.9	14.0	31.1	369,152
At Risk						
Yes	10.6	29.7	24.2	13.2	28.4	215,246
No	22.4	20.8	20.5	15.4	34.8	190,784
Career/Technical Education (CTE)						
None	16.4	15.4	17.1	21.2	38.7	141,676
Some CTE	16.1	26.0	22.2	12.0	29.8	131,703
Coherent CTE	15.9	35.8	28.3	9.1	25.1	132,651

*Note: Row percentages do not add up to 100% because students enrolled in > one endorsement programs.

Policy Recommendations

This exploratory study reveals differences in endorsement enrollments associated with socio-demographic and school programs factors. Findings indicate that Business & Industry and Public Service endorsements often associated with career/technical education (CTE) are more likely to enroll students from disadvantaged backgrounds (i.e., economically disadvantaged, at-risk, LEP, ESL, and some race/ethnicity groups). This situation may create a racial and ethnic stratification similar to the one observed by Kao and Thompson [7] in relation to course-taking and academic tracking. Meanwhile, STEM and Arts & Multidisciplinary endorsements, which are more academically oriented, enroll privileged groups of students (e.g., White, non-LEP, non-ESL, economically advantaged, Gifted, etc.). Gender differences are also noted with male enrolling on STEM and Business & Industry, while female students in Public Service and Arts & Humanities. Therefore, the main policy recommendation is to provide adequate school counseling for all students, in order to receive guidance and be equally oriented toward endorsements that better match their aptitudes and interests. Although endorsements are not equivalent to academic tracking because students follow a common curriculum core, any sign of stratification needs to be properly addressed.

---

[1] Texas Higher Education Coordination Board (2010). *Accelerated plan for closing the gaps by 2015*. Austin, TX: THECB. Retrieved from http://www.thecb.state.tx.us/AcceleratedPlan CTG2015.

[2] Texas Higher Education Coordination Board (2015). *60x30TX*. Retrieved from http://www.thecb.state.tx.us/index.cfm? objectid=5033056A-A8AF-0900-DE0514355F026A7F.

[3] *Texas Education Agency (n.d.). Graduation toolkit: Information for planning your high school years & beyond.* Retrieved from *tea.texas.gov/communications/grad_toolkit/ booklet.pdf*.

[4] Callan, P. M., Finney, J. E., Kirst, M. W., Usdan, M. D., & Venezia. A. (2006). *Claiming common ground: State policymaking for improving college readiness and success*. Stanford: The National Center for Public Policy and Higher Education.

[5] Lucas, S.R. (1999). *Tracking inequality: Stratification and mobility in American high schools*. New York: Teachers College Press.

[6] Loveless, T. (2009). *Tracking and detracking: High achievers in Massachusetts middle schools*. Washington, DC: Fordham Institute.

[7] Kao, K. & Thompson, J. (2003). Racial and ethnic stratification in educational achievement and attainment. *Annual Review of Sociology, 29*, 417–442.