From policy frameworks to classroom realities: Analyzing the role of academic tracking in perpetuating educational inequality

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#### **ABSTRACT**

This study examines the Foundation School Program (FSP), a policy designed to improve access to academic tracks and provide students with greater flexibility in their educational pathways. The goal is to evaluate whether the FSP effectively prepares students for the workforce or higher education while addressing systemic inequities in public education. The study utilizes data from the Texas Education Agency covering over 1,200 school districts and applies negative binomial regression analysis to assess the FSP's impact on African American, Hispanic, and white students. By analyzing enrollment patterns and outcomes, the study investigates whether the policy fosters equitable access to academic tracking programs. Despite increasing student and parent choice in academic tracking, the FSP does not eliminate racial disparities in access to specialized academic tracks. The policy fails to address underlying funding inequities and systemic barriers that disproportionately impact marginalized students. The findings suggest that the FSP mitigates racial disparities in academic tracking. Without structural reforms, the program remains ineffective in achieving equitable access to educational opportunities. This study provides policymakers and administrators with actionable recommendations to enhance equity in academic tracking. These insights can inform policy reforms in other states, regions, and countries with similar public education systems.

**Keywords:** Academic tracking, education inequality, education policy, public education reform, student choice, Foundation School Program

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## Highlights of this paper

- Academic tracking helps students develop specialized skills to prepare for the workforce, particularly for middle-sector jobs that require more than a K-12 education but not a college degree.
- The Foundation School Program (FSP), established in 2013, was designed to increase student access to academic tracks by allowing families more control over curriculum and graduation plans.
- However, a longitudinal study using Texas Education Agency data found that the FSP does not improve equity in academic tracking, prompting recommendations for policymakers to enhance access for marginalized students.

### 1. INTRODUCTION

Academic tracking or grouping can give students a specific skill set to better prepare them for life after graduation. In the United States, tracking policies are used to meet the country's need for a more highly specialized labor force. They allow students to develop skills and gain knowledge that will enable them to enter the country's growing middle sector after graduation. This sector comprises higher-paying jobs that require more skills than traditional kindergarten-12 education can provide, but do not require a college education (Low, 2023). Thus, they appeal to students who cannot attend college given its exorbitant cost, prefer to enter the workforce, or wish to attend trade school.

One such program is the Foundation School Program (FSP), established by House Bill 5 in 2013. The FSP is innovative because it allegedly will increase student access to academic tracks. State and national standardized testing or subjective measures will no longer determine a student's academic path. Instead, it places the curriculum, tracking, and graduation plans in the hands of parents and students (Mellor, Stoker, & Reese, 2015). Doing so allows them to choose an academic path they feel best suits them while still receiving guidance from the school's professional staff (Texas Education Agency, 2024a).

This cross-sectional and longitudinal study analyzes the FSP because of the massive benefits it could have on the United States public education system and economy by minimizing racial disparities in academic tracking. It uses data collected by the Texas Education Agency (TEA) for over 1200 school districts over a two-year period and negative binomial regressions to determine its effects on African American, Hispanic, and white students. This examination of the FSP determines that it fails to increase equity in access to government-funded academic tracking programs (Banaji, Fiske, & Massey, 2021). Therefore, the study concludes by offering policymakers and administrators suggestions to promote greater equity in tracking. These recommendations have broad applicability and can be adopted by other states, regions, and countries with comparable public education systems.

#### 2. LITERATURE REVIEW

### 2.1. Academic Tracking Policies

In the 1930s, academic tracking policies were created to improve public education in the United States (National Association of Secondary School Principals, 2006). In theory, tracking policies provide students with higher-quality education by using their perceived ability, I.Q., or achievement level as a benchmark of their academic ability (National Association of Secondary School Principals, 2006). These policies require students to take certain courses, often in a specific sequence. Thus, they better prepare them to graduate, enter the workforce, or attend college and trade schools (National Association of Secondary School Principals, 2006). Given its perceived benefits, tracking is commonplace in the public education system (Bernhardt, 2022). Its opponents, however, document how tracking "is detrimental to students, especially in the low and middle tracks largely comprising" students from marginalized groups such as racial and ethnic minorities, those living in poverty, and those living in urban and rural areas (Bernhardt, 2022; Francis & Kelley, 2021; National Association of Secondary School Principals, 2006).

Similarly, today's tracking policies "give students relatively constricted academic content... suited to particular educational pathways associated with the label of that track" (Parker, Jerrim, Schoon, & Marsh, 2016). Likewise, placement can still be based on factors that may not accurately measure a student's capability or intelligence, such as standardized testing (Chatterji, 2020; Francis & Kelley, 2021; Rosales & Walker, 2021). It is also made without regard for non-academic factors that significantly affect performance, such as school culture, class climate, poverty, housing instability, mental health conditions, and family dynamics (Institute for Children Poverty and Homelessness, 2019; Javornik & Klemenčič Mirazchiyski, 2023; Substance Abuse and Mental Health Services Administration, 2024).

In addition, if the educational expectations of educators, diagnosticians, and counselors are low, they can negatively affect students' self-expectations and self-worth. This is especially true for poor students and members of marginalized groups (Parker et al., 2016; Reardon, 2011). These low self-expectations can prevent students from seeking placement on more advanced tracks (Parker et al., 2016; Reardon, 2011). Thus, today's tracking policies may not only perpetuate the same racial, ethnic, and socioeconomic disparities in placement but also have long-term effects on college readiness and wage-earning potential (Francis & Kelley, 2021; National Association of Secondary School Principals, 2006; Parker et al., 2016).

## 2.2. Reducing Inequality through Policy: The Foundation School Program

In theory, the FSP's emphasis on student and parent choice mitigates these issues of subjectivity, perception, and standardized testing in tracking. While all students must complete a general 22-credit course load to meet state requirements for graduation, they can select one of five academic tracks, now referred to as endorsements (Texas Education Agency, 2024b). The endorsements are science, technology, engineering, and mathematics (STEM), business and industry (B.I.), public service (P.S.), arts and humanities (A.H.), and multidisciplinary studies (M.S.) (Texas Education Agency, 2024b). According to the Texas Education Agency (2024b), endorsements provide students with significant advantages beyond preparation for the workforce, such as allowing students to strive to qualify for automatic admission in the top 10 percent at any Texas public university, enhance their chances of receiving a TEXAS Grant, and strengthen their competitiveness when applying to the nation's most selective colleges and universities.

The FSP allows school districts and administrators to determine the number of endorsements they will offer and their curricula. The only requirement from the state is that districts, at a minimum, must offer the M.S. endorsement. Students can have multiple endorsements and the freedom to change at any time or, with the approval of their legal guardians, opt out of the program (Texas Education Agency, 2024b). Students may also graduate with enhancements that include a distinguished level of achievement and performance acknowledgment. Thus, the FSP appears to be a marked improvement from past tracking policies.

# 2.3. Inequity Embedded in the FSP: Endorsement Selection

District administrators and school boards also determine the sequence in which classes must be taken and how students select endorsements. While this allows the district to establish procedures best suited for them, it can create an undue burden for parents and students. A lack of knowledge of district policies or course offerings may result in difficulties for students wishing to change or add endorsements, those new to the district, or those whose parents or legal guardians are not involved in their education. Likewise, factors such as time, budget, and student-to-counselor ratio can prevent students from receiving the professional support promised by the FSP. Those attending overcrowded, understaffed, and resource-strapped schools may struggle to create their four-year academic plans (Chatterji, 2020; Erwin & Thomsen, 2021).

There are also other factors that can result in unequal access to endorsements (Hudson, Hunter, & Peckham, 2019; Mellor, Stoker, & Muhisani, 2017; Mellor et al., 2015). In the United States, teacher shortages are a common concern. Teacher shortages are concentrated in rural areas and in schools that serve students from less wealthy families, as well as in more specialized teaching fields, including science, technology, engineering, and mathematics (McKinley & Bureau, 2022). By failing to address the teacher shortage and other traditional concerns like inadequate funding and resources, students attending these schools may continue to encounter obstacles that deny them equal access to endorsements.

To circumvent these issues, the FSP allows districts to offer alternative methods to satisfy endorsement and graduation plan requirements. Students can take a college course for credit, enroll in distance learning programs through two public universities, or take an online course through the Texas Virtual School Network (TVSN) (Snyder, 2020). However, the online course required to satisfy the language requirement for the arts and humanities endorsement for example, costs \$375 and requires daily access to a computer and the Internet (Snyder, 2020). The other alternatives also require financial resources or private vehicle transportation. Given the cost and resources needed, these alternatives are only viable options for wealthier students, thus perpetuating socioeconomic disparities in public education and limited access to multiple academic tracks (Erwin & Thomsen, 2021).

### 2.4. Executive Report Findings

The American Institute of Research's (AIR) most recent FSP executive report was published in December 2017 on behalf of the Texas Legislature and other state agencies. Using survey data collected from teachers and administrators, it reported:

- 1. Ninety-six percent of districts offered the endorsement of multidisciplinary studies.
- 2. Fifty-six percent of districts offered all five endorsements.
- 3. According to Mellor et al. (2017), "forty-nine percent reported a lack of resources (funding, curriculum, facilities, and equipment) as a continued barrier" (p. 55).
- 4. Sixty percent of responding districts reported staffing concerns around teacher qualifications and staff capacity as a continued barrier to offering specific endorsements. Thus, it is not a lack of desire or interest preventing students from enrolling in endorsements but instead a lack of access (Mellor et al., 2017).

The 2017 AIR report also lists several bills passed between 2015 and 2017 to improve the FSP. For example, House Bill 18, passed by the 84th Texas Legislature, "strengthens the college and career advising available to students" (Mellor et al., 2017). The 85th Texas Legislature removed the state's "math and English sequencing needed to meet English and mathematics course requirements," increasing parents' and students' freedom of choice and administrators' autonomy (Mellor et al., 2017). However, there have been no changes to improve endorsement access.

### 3. THEORY AND HYPOTHESES

This study examines student participation in the FSP disaggregated by race and ethnicity to help administrators improve access to each endorsement. This analysis is critical since no study has been conducted since 2017 (Mellor et al., 2017). Three hypotheses regarding endorsement access are tested using publicly available data from the Texas Education Agency. They focus on the obstacles noted in the 2017 AIR report: financial resources, teacher availability, and professional staff. Mellor et al. (2017) survey data noted that administrators and teachers reported that a lack of funds severely hinders districts' ability to offer more endorsements. However, the report did not examine how different student populations are affected by the lack of resources. It is understood that schools cannot buy new textbooks, build labs, hire teachers, and offer more classes without proper financial resources. These tools are

necessary to improve their ability to provide students with more than the required M.S. endorsement or opt-out of the FSP. Thus, hypothesis 1: Increases in instructional expenditures will increase endorsement enrollments.

High teacher turnover prevents districts from having enough teachers or those with the proper qualifications or training to offer specific classes and multiple endorsements. This was a concern documented in the AIR reports (Mellor et al., 2017; Mellor et al., 2015). Given that the FSP does not include policies or strategic plans to mitigate teacher turnover, it will negatively affect students' enrollments. Thus, hypothesis 2: Increases in teacher turnover will decrease endorsement enrollment.

Professional staff (i.e., counselors and diagnosticians) are critical to the FSP, as they must work with parents and students to select endorsements. Due to a lack of information and understanding, high school students and parents may find the process overwhelming compared to the more structured nature of elementary and intermediate schools. This is especially true for incoming first-year students, transfer students, and those with limited parental involvement in their education. Professional staff are trained to provide guidance, allowing parents and students to better understand the school's policies and processes, thus reducing the burden they experience during the endorsement selection process and throughout their high school careers (Erwin & Thomsen, 2021). Thus, hypothesis 3: Increasing the percentage of professional staff will increase enrollment.

### 4. DATA AND METHODS

Publicly available data from the Texas Education Agency from the 2018-2020 academic years and a crosssectional and longitudinal research design are used to test the hypotheses. The data used are collected annually from over 1200 school districts by the state of Texas. 2018-2020 are ideal years for this study because they are after the publication of AIR's 2017 executive report and before COVID-19 in 2020. Thus, student enrollments in over 1200 school districts are examined over a two-year period. Due to inconsistency in annual data reporting to the TEA during the pandemic, the 2020-2022 academic years are not included to avoid skewing the findings (Lopez, 2022). In addition, the mode of instruction during the pandemic was inconsistent across the state, affecting access to specific courses beginning in 2020 (Texas Classroom Teachers Association, 2021). The reliance on technology disproportionately affected low-income students and students of color, who struggled to access computers and Wi-Fi (Gee, Asmundson, & Vang, 2023). Some teachers chose not to return to the classroom when restrictions were lifted, citing burnout and low pay (Long, 2022). Finally, parent involvement in education varied during this unprecedented time, affecting their roles in actively engaging in the endorsement selection process. Thus, the data from 2020-2022 do not accurately portray enrollments. Given that the dependent variables of student enrollments are count data, this study uses negative binomial regressions to test its hypotheses. In addition, enrollments are overdispersed, and the means of endorsement enrollments are less than the variances, further supporting the use of this type of regression. The coefficients in negative binomial regressions are interpreted as "a one-unit change in the independent variable, the difference in the logs of expected counts of the dependent variable is expected to change by the respective regression coefficient" (UCLA, 2006). For example, a coefficient of .75 is interpreted as a .75 increase in the log of one endorsement enrollment, holding other variables constant. The three independent variables are instructional expenditures, teacher turnover, and the district's professional staff percentage. The marginal effects are calculated to place these relationships in a better context for administrators. The marginal effects show how student enrollments increase or decrease with changes in the independent variables, with all other variables held constant. Based on the data used in this study, from 2018-2020, whites comprised 44.6 percent, Hispanics 42.1 percent, and African American students were 8.8 percent of students enrolled in Texas schools. Since the data shows more white and Hispanic students attend public schools in Texas than African Americans, the marginal effects will naturally

show a higher number of enrollments for whites and Hispanics than for African Americans for each endorsement. School types are controlled to ensure charter schools do not contaminate the models. Charter schools can have different teacher qualifications, access to additional funds, and waivers from education laws (Education Commission of the States, 2020). Access to these schools is also limited. The remaining variables in this study are:

- Type and size of school.
- Charter.
- b. Traditional public school.
- Number of schools.
- Financial resources. d.
- Financial resources.
- Instructional expenditures.
- Percent federal, state, and local government revenue. b.
- Local tax rate. C.
- Based on the FSP's funding formula, the amount provided by the state decreases as local funding increases. i. The funding formula includes district characteristics, geography, tax rates, and local taxable property.
- Standardized test scores.
- In Texas, performance is also tied to funding. i.
- Employee Characteristics. 3.
- Teacher race (Percent).
- Teacher turnover (Percent). b.
- Teacher experience.
- Student-to-teacher ratio. d.
- Number of general staff. e.
- Professional staff (Percent). f.
- Student population. 4.
- Low-income student (Percent).
- i. Students who qualify for free or reduced-price lunch.
- Student race (Percent). b.
- Number of students.

The descriptive statistics for these variables are in Appendix 1.

#### 5. RESULTS<sup>1</sup>

H: Effects of Financial Resources on Endorsement Enrollment.

Effects on African American students: Table 1 shows that increases in instructional expenditures have a positive and significant effect on African American enrollments in all endorsements except for STEM. The greatest impact is on public service endorsement enrollments (.057). The lack of effect on STEM enrollments is interesting, as the solution discussed to reduce inequalities in public education is often to increase instructional funding (Turley, 2020). Knowing that African Americans are underrepresented in STEM, the lack of relationship should be explored in future reports, as STEM experiences in kindergarten through 12th grade increase the likelihood of entering the field (Fry, Kennedy,

 $<sup>^{1}</sup>$  Statistical Significance: \* = <.05 and \*\* = <.01.

& Funk, 2021). If better preparing students for life after graduation is FSP's goal, determining ways to increase African American STEM enrollments should be a priority, as jobs increasingly require STEM skills (Fry et al., 2021).

Table 1. Financial resources' effects on enrollments.

| Instructional expenditures   | Black   | White   | Hispanic |
|------------------------------|---------|---------|----------|
| STEM                         | 0.042   | 0.052** | 0.051**  |
|                              | (0.024) | (0.011) | (0.012)  |
| Business and industry (B.I.) | 0.041** | 0.041** | 0.054**  |
|                              | (0.017) | (0.010) | (0.011)  |
| Public service (P.S.)        | 0.079** | 0.060** | 0.058**  |
|                              | (0.021) | (0.012) | (0.014)  |
| Arts and humanities (A.H.)   | 0.057** | 0.068** | 0.068**  |
|                              | (0.021) | (0.014) | (0.012)  |
| Multi. studies (M.S.)        | 0.060** | .038**  | 0.036**  |
|                              | (0.017) | (.010)  | (0.009)  |

**Note:** Statistical significance: \*\* = <.01.

Effects on Hispanic students: Table 1 demonstrates that increases in instructional expenditures positively and significantly affect enrollments for all endorsements. The greatest effect for Hispanic students (.068) is increased arts and humanities enrollments. The positive effects on Hispanics in STEM raise two questions. First, are institutional or systemic factors at work preventing African American students from experiencing the same benefits as Hispanics? Second, will this translate to increased diversity in STEM in the near future?

Effects on white students: Finally, Table 1 indicates that instructional expenditures have a positive and statistically significant impact on enrollments across all endorsements. The greatest effect for white students (.068) is increased enrollment in arts and humanities. The similarity of increases in enrollments for white and Hispanic students in STEM and the arts and humanities suggests that the increased financial resources can improve access to endorsements for some student populations. Marginal Effects: To better understand the effects and provide more context for administrators, the marginal effects below predict endorsement enrollments at different percentages of instructional expenditures (Tables 2-3). They can be interpreted as the average endorsement enrollment for that demographic when these resources are at a certain percentage.

Table 2. Financial Resources' Marginal Effects on STEM Enrollments.

| Percentage | African American STEM | White STEM | Hispanic STEM |
|------------|-----------------------|------------|---------------|
| 10 percent | -                     | 10         | 15            |
| 20 percent | -                     | 16         | 25            |
| 30 percent | -                     | 28         | 43            |
| 40 percent | -                     | 48         | 72            |
| 50 percent | -                     | 81         | 120           |
| 60 percent | -                     | 137        | 100           |
| 70 percent | -                     | 231        | 336           |

Few schools spend 70 percent of their available budget on instructional expenditures, but the significant differences between 50-60 percent and 60-70 percent for Hispanic STEM enrollments must be noted. The increases in Hispanic and white enrollments align with the survey participants' belief that more resources will increase the number of students in STEM, most likely due to increased access to specialized resources and funds to hire the teachers needed to offer the endorsement (Mellor et al., 2017). Examining the effects on the other endorsements also demonstrates significant increases for all demographics (Table 3).

 Table 3. Instructional expenditures' marginal effects on other endorsement enrollments.

| Percentage | African<br>American P.S. | African<br>American<br>A.H. | African<br>Americ<br>an B.I. | African<br>Americ<br>an M.S. | White<br>P.S. | White<br>A.H. | White<br>B.I. | White<br>M.S. | Hispanic<br>P.S. | Hispanic<br>A.H. | Hispanic<br>B.I. | Hispanic<br>M.S. |
|------------|--------------------------|-----------------------------|------------------------------|------------------------------|---------------|---------------|---------------|---------------|------------------|------------------|------------------|------------------|
| 10 percent | 2                        | 3                           | 14                           | 11                           | 4             | 4             | 19            | 49            | 15               | 7                | 23               | 84               |
| 20 percent | 3                        | 6                           | 21                           | 21                           | 9             | 9             | 29            | 72            | 27               | 15               | 39               | 120              |
| 30 percent | 7                        | 10                          | 31                           | 38                           | 16            | 18            | 44            | 105           | 49               | 30               | 67               | 171              |
| 40 percent | 16                       | 18                          | 47                           | 69                           | 29            | 36            | 66            | 154           | 87               | 60               | 114              | 245              |
| 50 percent | 35                       | 32                          | 70                           | 124                          | 54            | 71            | 99            | 225           | 156              | 119              | 196              | 349              |
| 60 percent | 77                       | 57                          | 105                          | 226                          | 98            | 141           | 149           | 330           | 280              | 235              | 336              | 498              |
| 70 percent | 170                      | 101                         | 158                          | 409                          | 178           | 279           | 224           | 483           | 500              | 464              | 376              | 711              |

Understanding these relationships is critical for administrators, school boards, and public education policymakers when allocating funds to public education. While all demographics benefit from increases in instructional expenditures, the effects have been inconsistent and have persisted since 2014 (Mellor et al., 2017; Mellor et al., 2015). Thus, the FSP has failed to address this issue. Identifying the root cause of these differences is critical to increasing equity.

H2: Effects of Teacher Turnover on Endorsement Enrollment.

Findings: The second hypothesis is supported, as teacher turnover is correlated with a decrease in all endorsement enrollments across all demographics (Table 4). However, African Americans are negatively affected by turnover more than Hispanics and whites.

Table 4. Effects of turnover on endorsement enrollments.

| Teacher turnover             | Black    | White    | Hispanic         |
|------------------------------|----------|----------|------------------|
| STEM                         | -0.088** | -0.018** | -O.O25**         |
|                              | (0.013)  | (0.005)  | (0.007)          |
| Business and industry (B.I.) | -0.049** | -0.014** | -O.O25**         |
|                              | (0.010)  | (0.005)  | (0.005)          |
| Public service               | -0.062** | -0.033** | -0.041**         |
|                              | (0.012)  | (0.008)  | (0.008)          |
| Arts and humanities (A.H.)   | -0.067** | -0.028** | -0.031**         |
|                              | (0.012)  | (0.006)  | (0.006)          |
| Multi. studies (M.S.)        | -0.039** | -0.011** | <b>-</b> 0.014** |
|                              | (0.009)  | (0.003)  | (0.004)          |

Note: Statistical significance: \*\* = <.01.

Administrators should note the decrease in public service for all groups as well. Given that public service prepares students for careers associated with public policy provisions such as the health sciences and occupations, education, and training, [and] law enforcement... the decreases in public service enrollments can have severe implications for Texas citizens in the future. (subsection c-1(3) pg. 27). It is critical to ensure students have access to this endorsement to encourage and prepare them to enter civil service or further their education in these fields after graduation.

Marginal Effects: Tables 5-6 show how dramatic the statistically significant marginal effects are at 0, 10, 20, and 30 percent turnover for all endorsements.

Table 5. Teacher turnover marginal effects on STEM enrollments.

| Percentage | African American STEM | White STEM | Hispanic STEM |
|------------|-----------------------|------------|---------------|
| 0 percent  | 196                   | 154        | 245           |
| 10 percent | 81                    | 129        | 191           |
| 20 percent | 34                    | 108        | 149           |
| 30 percent | 14                    | 91         | 116           |

Table 6. Teacher turnover marginal effects on other endorsement enrollments.

| Percentage | African       | African       | White | White | Hispanics | Hispanic        | African       | African       | White | White | Hispanic |
|------------|---------------|---------------|-------|-------|-----------|-----------------|---------------|---------------|-------|-------|----------|
|            | American B.I. | American M.S. | BI    | MS    | B.I.      | $\overline{M}S$ | American P.S. | American A.H. | P.S.  | A.H.  | P.S.     |
| 0 percent  | 230           | 371           | 159   | 345   | 404       | 542             | 183           | 163           | 136   | 178   | 413      |
| 10 percent | 141           | 252           | 139   | 308   | 314       | 471             | 99            | 83            | 98    | 135   | 274      |
| 20 percent | 86            | 172           | 121   | 276   | 244       | 409             | 53            | 42            | 71    | 102   | 182      |
| 30 percent | 53            | 117           | 106   | 247   | 189       | 355             | 28            | 21            | 51    | 77    | 121      |

## H<sub>s</sub>: Effects of Professional Support Staff on Endorsement Enrollment.

Findings: The third hypothesis is supported. Given their importance to student success, Section 13a of the FSP states that a school must provide a counselor or similar professional to guide and advise students (Erwin & Thomsen, 2021). This study finds that the percentage of professional support staff increases enrollments for all endorsements for all demographics (Table 7). African American students benefit the most from increases in professional staff across every endorsement, especially in STEM. The only exception is multidisciplinary studies.

Table 7. The effects of professional staff on endorsement enrollments.

| Professional staff           | Black   | White   | Hispanic |
|------------------------------|---------|---------|----------|
| STEM                         | 0.092** | 0.031** | 0.029**  |
|                              | (0.018) | (0.011) | (0.010)  |
| Business and industry (B.I.) | 0.057** | 0.031** | 0.042**  |
|                              | (0.011) | (0.009) | (0.009)  |
| Public service (P.S.)        | 0.078** | 0.044** | 0.049**  |
|                              | (0.016) | (0.010) | (0.011)  |
| Arts and humanities (A.H.)   | 0.078** | .039**  | 0.029**  |
|                              | (0.022) | (.011)  | (0.010)  |
| Multi. studies (M.S.)        | 0.033** | 0.022** | 0.022**  |
|                              | (0.015) | (0.009) | (0.007)  |

**Note:** Statistical significance: \*\* = <0.01.

Marginal Effects: The average percentage of professional staff is about 7 percent, with the lowest being zero and the highest 45 percent in this study. Tables 8-9 demonstrate the significant impact of these professionals on the number of endorsement enrollments. This should encourage administrators, school boards, and policymakers to allocate resources to help districts with zero percent professional staff increase to the state average at a minimum.

Table 8. Professional staff's marginal effects on STEM endorsements.

| Percentage | African American STEM | White STEM | Hispanic STEM |
|------------|-----------------------|------------|---------------|
| 0 percent  | 15                    | 86         | 122           |
| 10 percent | 37                    | 118        | 163           |
| 20 percent | 92                    | 162        | 219           |
| 30 percent | 231                   | 222        | 293           |
| 40 percent | 579                   | 304        | 393           |

**Table 9.** Professional staff's marginal effects on other endorsement enrollments.

| Percentag  | African       | African     | White | White | Hispanic | Hispanic | African       | African     | White | White | Hispanics | Hispanic |
|------------|---------------|-------------|-------|-------|----------|----------|---------------|-------------|-------|-------|-----------|----------|
| e          | American P.S. | American AH | PS    | AH    | P.S.     | A.H.     | American B.I. | American MS | B.I.  | M.S.  | B.I.      | M.S.     |
| 0 percent  | 26            | 21          | 52    | 77    | 133      | 135      | 49            | 130         | 97    | 234   | 176       | 285      |
| 10 percent | 57            | 46          | 81    | 115   | 218      | 180      | 87            | 181         | 132   | 292   | 267       | 433      |
| 20 percent | 124           | 99          | 125   | 170   | 355      | 240      | 155           | 252         | 179   | 365   | 406       | 659      |
| 30 percent | 270           | 213         | 194   | 251   | 580      | 320      | 275           | 351         | 243   | 456   | 616       | 1003     |
| 40 percent | 586           | 461         | 300   | 371   | 946      | 427      | 488           | 489         | 330   | 560   | 936       | 1527     |

#### 6. DISCUSSION

There are several possible explanations for the differences in endorsement enrollments. African Americans are more likely to attend poorer schools than other students, which means their access to all endorsements is more limited (Garcia, 2020; Turley, 2020). Rather than funding multiple endorsements, they may have to direct funds to core courses rather than those needed for STEM..

Regarding teacher turnover, the revolving door of teachers can prevent schools from establishing and maintaining the internal structure needed to offer endorsements consistently. As a result, some demographics suffer more than others (Ronfeldt, Loeb, & Wyckoff, 2013). Thus, administrators and policymakers must create ways to improve teacher retention to enhance access and enrollment numbers and recruit new teachers, which is especially true post-pandemic, where teacher shortages have skyrocketed (Long, 2022). Three reasons stand out regarding the positive effects of professional staff on all demographics. First, a higher percentage of counselors and diagnosticians may reduce the burden for students and parents, allowing them to better understand the enrollment processes and the importance of endorsements for future career opportunities and earning potential (Erwin & Thomsen, 2021). Second, professional staff are better trained to provide guidance, identify individual factors that affect students, such as learning disabilities, and work with parents and teachers to create plans to increase performance and the likelihood of graduation (Erwin & Thomsen, 2021). These plans may make some endorsements more appealing and accessible to students with learning disabilities by using modifications like extra time to complete exams. Third, the importance of emotional support and a positive self-image for performance must be considered. Professional staff can help students build confidence, increase their self-expectations, and encourage them to pursue endorsements outside their comfort zones. This is especially true for students with little parental involvement in their education (Najarro, 2022). These relationships are significant even when controlling for teacher turnover. Thus, professional staff are critical to student success. While some students benefit from the FSP's style of academic tracking, there is room for improvement. The following recommendations may help state and local governments and administrators improve access and endorsement enrollment.

- 1. School funding is primarily based on property taxes (Texas Education Agency, 2022). Poor students should not be denied access to academic opportunities that will increase their wage-earning potential and college readiness upon graduation simply because they live in low-income areas. Therefore, policymakers should work with administrators to create incentives for local businesses, communities, public and private colleges and universities, trade schools, trades, and community leaders to develop low-to-no-cost programs, apprenticeships, and internships that count as credit. Allowing students to seek out different ways to earn credit can improve their access to endorsements and minimize the effects of the teacher shortage.
- 2. Provide grant funding for labs and essential equipment for schools in low-income and rural districts and redefine "priority" for schools receiving grants. Currently, "substantially equal access to similar revenue per student at similar tax effort" is promised (Texas Education Agency, 2024a). However, there must be a more precise method to determine the needlest districts and a focus on creating equity, not equality.
- 3. Only use standardized tests to collect data and identify barriers to academic success, not as a determination for state funding (Perry, 2021). This can reduce the time and resources districts use for "teaching to the test" and give teachers and students opportunities to explore endorsements more extensively and creatively.
- 4. Develop a strategic plan to make teaching more appealing and offer incentives to recruit and retain teachers and professional staff (Podolsky, Kini, Bishop, & Darling-Hammond, 2016).
- 5. Ensure schools have enough counselors and academic advisors to create and implement personalized graduation plans, as stated in the FSP. Policymakers, school boards, and administrators should also require

regular evidence-based training to improve the quality of advisement students and parents receive (Francis & Kelley, 2021). Provide additional resources to diagnose learning disabilities and behavioral concerns. This can be done through Medicaid, children's health programs, or similar government programs to improve access to diagnosticians and other professional staff within the school. Children and teens with undiagnosed learning disabilities and behavioral problems often have lower academic performance (Schlack, Peerenboom, Neuperdt, Junker, & Beyer, 2021). This impacts their ability to complete specific courses required for some endorsements. Addressing these issues will allow students to request accommodations to improve their access, performance, and overall well-being.

### 7. CONCLUSION

Not addressing the inequities, intentional or not, in academic tracking policies means that the public education system will continue to perpetuate racial disparities. Innovative tracking policies like the FSP have the potential to reduce these inequities. This requires not only increased funding for instruction but also making teaching a more attractive profession and ensuring professional staff have the support and resources they need to meet the needs of students. Rather than politicizing public education, eliminating diversity, equity, and inclusion programs (DEI), banning books, and removing essential elements of the nation's history from the curriculum, administrators and policymakers must acknowledge the structural and institutional barriers different student populations experience and create ways to limit their effects on the students within the public school system (Chatterji, 2020). Only by doing so can all students genuinely benefit from academic tracking.

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Appendix 1. Descriptive statistics.

| Variable                                   | Mean  | Variance | Observations |
|--|-------|----------|--------------|
| African American STEM                      | 39.5  | 24028.41 | 1059         |
| White STEM                                 | 113.8 | 93626.25 | 1522         |
| Hispanic STEM                              | 163.6 | 284381.1 | 1510         |
| African American business and industry     | 90.3  | 86681.8  | 997          |
| White business and industry                | 125.2 | 41419.7  | 1668         |
| Hispanic business and industry             | 263.1 | 585715.2 | 1495         |
| African American public service            | 57.6  | 30575.5  | 1216         |
| White public service                       | 78.4  | 27390.4  | 1610         |
| Hispanic public service                    | 213.8 | 407505.3 | 1568         |
| African American arts and humanities       | 47.7  | 23344.9  | 1049         |
| White arts and humanities                  | 110.4 | 62387.5  | 1510         |
| Hispanic arts and humanities               | 181.5 | 283596.8 | 1493         |
| African American multidisciplinary studies | 184.8 | 215705   | 977          |
| White multidisciplinary studies            | 290.2 | 541413   | 1742         |
| Hispanic multidisciplinary studies         | 446.4 | 1405031  | 1665         |

This study is not an experiment and does not rely on primary data. Instead, it utilizes secondary data collected by the Texas government. Texas schools are required to report this data annually to the Texas Education Agency (TEA), which publicly shares it on their website ([TEA Reports and Data](https://tea.texas.gov/reports-and-data)). Since the data is publicly available and collected by the state, IRB approval is not required for its use.

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