CBC Institutional Progress
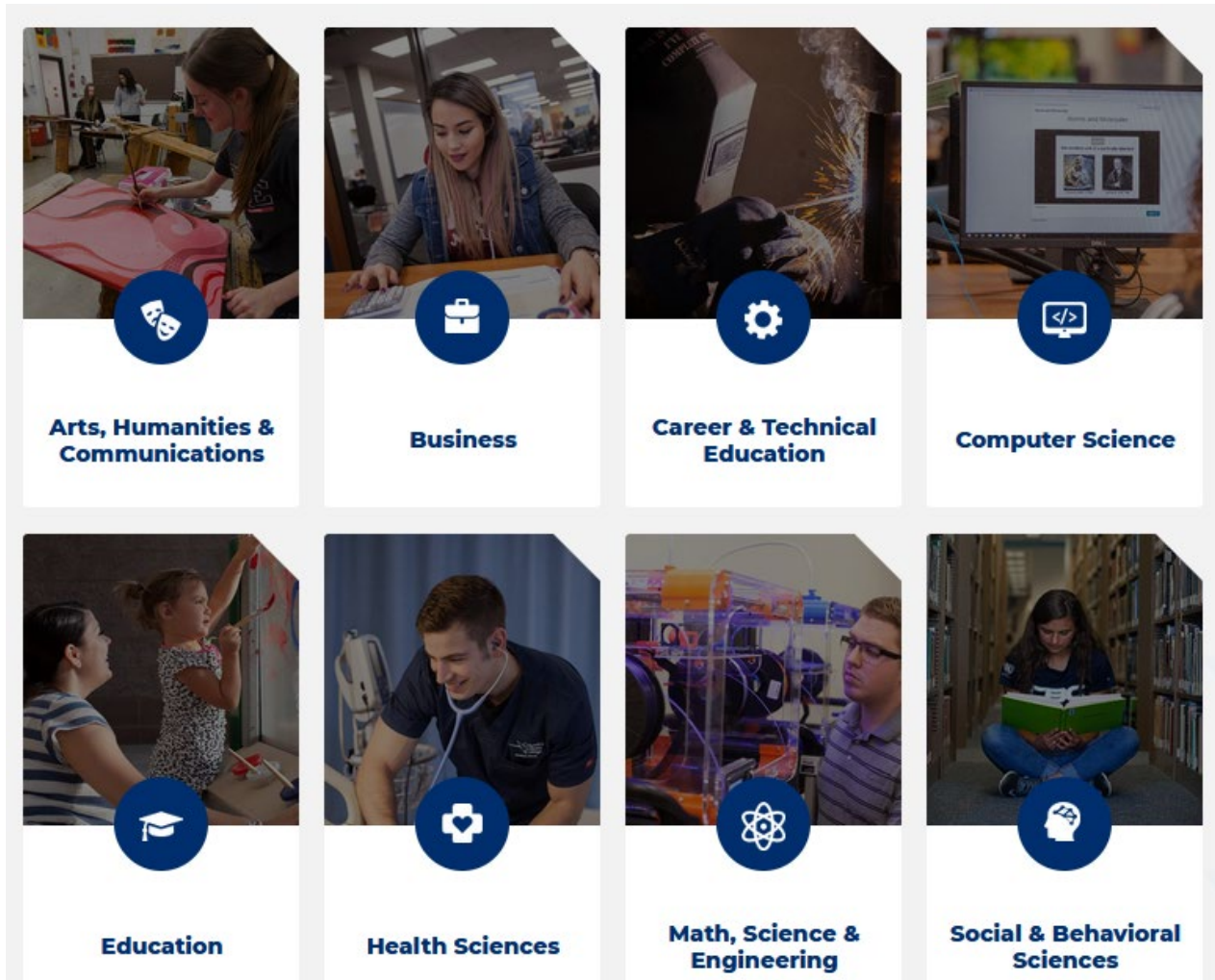# Fall Update: 2022-23

April 14, 2023

Columbia Basin College
Authored by: Institutional Research

Background

Degree completion has proven to be the primary driver of both student and public value of the community college. CBC's direct value to students and the public is completion and transfer, including the completion of a bachelor's degree. That conclusion is founded on broad-based, repeated/replicated research over several decades. Additionally, the value of a degree, and the predictors of completing a degree, provide the basis for educational interventions to affect completion – which are embodied in many Guided Pathways interventions. With completion as the goal, in October 2018, CBC presented indicators based on new Board Policies (Mission, Vision, and Values) that center upon degree completion and critical basic conditions, predictors of degree completion. Those indicators were refined and updated in December 2021 after the first three-year cycle.

This report looks at measures as of Fall 2022 to get a sense of what we might expect by the end of the year on our performance indicators. None of these measures are ironclad predictors of future performance, but are still reliable measures to ground our expectations and look forward.

The Student and Public Value of CBC Degree Completion is High. In 2022, Lightcast, formerly Economic Modeling LLC ("EMSI"), conducted an independent review of CBC's ROI for students, the taxpayer, and a net social impact. Their review showed that student investment in CBC was returned 6.7 times (only measurable benefits), with an annual rate of return of 19.8% and the annual rate of return for taxpayers was 1.2%. On average, associate's degree completers earned $5,800 more annually than their peers with only a high school diploma. However, we know many of our Associate of Applied Science Degree programs earn significantly more than the "average" such as our Allied Health programs, Computer Science, Cyber Security, Engineering Technology, Career and Technical Education programs and more.

The "Steps to Success" as Predictors of Completion: The Importance of Early Indicators[1]. While degree completion is the goal, it is not a particularly timely metric. Three years is a long time to wait for a final referendum on what has been accomplished three years prior. This puts a premium on finding the best early indicators of ultimate student success to use as a guide. While not an exact science, a handful of meaningful leading indicators of degree completion provide a foundation for this report – course success, retention, completion of gateway courses, and timely credit attainment. Importantly, again, these indicators take less time to reliably assess – typically after the close of each academic year.

Not only are these early indicators timely, but they historically do an excellent job in helping us forecast longer term student outcomes.[2] Thirteen indicators – many of which are included in this report – are most important in external research. We repeat every year (every month across campus that "the first year in a student's career is pivotal for their long-term success" – establishing a new identity as a college learner, "lighting the fire" of that new journey, and making real progress in credit attainment. Within the first year, we can argue that *the very first term in a student's career is the most important part of that year*.

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[1] Moore, C., Offenstein, J., & Shulock, N. (2009). *Steps to success: Analyzing milestone achievement to improve community college student outcomes*. California State University, Sacramento, Institute for Higher Education Leadership & Policy. See also Washington State Board for Community and Technical Colleges (2007), Student Achievement Initiative (SAI).
[2] Yanagiura, T. (2020). Should Colleges Invest in Machine Learning? Comparing the Predictive Powers of Early Momentum Metrics and Machine Learning for Community College Credential Completion. CCRC Working Paper No. 118. *Community College Research Center, Teachers College, Columbia University*.

Executive Summary

With only one term in the 2022-23 academic year behind us, a few key metrics are sufficient to get a sense of our **first term performance** and additionally where we are likely to land by the end of the year. It also helps give us a jump on any emerging trends or opportunities if any exist.

The following are our main takeaways from this year - "Strengths and Opportunities" - and a quick note on our CBC Enrollment patterns over time – after which we present one-page reviews of key measures.

Mission Fulfillment Results (Overall Strengths and Opportunities)

Notable Strengths:
- Our 2021-22 Cohort continues to do well, with 2 Year 45 Credit Attainment by Fall is up substantially two years running (7.1% total to 32.9%), and
- Fall to Fall Retention, which was concerning in the last two years, appears to have rebounded to more historical norms (+5.0% to 50.4%)
- Levels of first term course success is encouraging (+2.0%)
- College level math completion, while not moving substantially in the last two years, has had two years in which Hispanic success rates were at an encouraging level of parity (<2.0%).

Areas of Opportunity:
- Overall levels of college English attainment fell back to the previous year's level (12.5%) after a spike to over 18% last year and exhibited less parity with Hispanic students. It is unclear yet whether this is a one-year artifact of high Fall demand for ENGL&101 (seen before the pandemic) that will "even out", but with new enrollments on the rebound, it is an area we have been watching.
- Three-year completion rates are modestly higher by Fall 2022 and parity is more reasonable with this measure than others, but with the 2020-21 first year leading indicators as strong as they had been, we were expecting a bit more movement. It's still possible that Winter/Spring completions and transfers could lead to better than anticipated performance, but right now the expectations looks simply "good".
- Concerningly large disparities persist in a few leading measures: 45 credit attainment by year 2, 13 credit attainment in Fall (largely a full-time vs part-time phenomenon), and course success.

Table 1 summarizes and highlights "Overall Year to Year Change" in our Fall Leading Indicators and how they stack up in their equity performance level and longer-term trends.

Table 1. Change in Fall Leading Indicators and Year End Forecasts (For Available Indicators)

Fall Update Predictors (results as of Fall Term)	Cohort	Fall Leading Indicator Change	2-Year Change	*Current* HSI Equity Difference (Leading Indicator)	HSI Equity (5-Year Trend)
Three Year Completion	2020-21	1.2%	0.0%	Small	➔
Year 2 Credit Attainment 45 Credits	2021-22	**3.9%**	**7.1%**	**Large**	➔
Retention	2021-22	**5.0%**	1.5%	**None**	➘
First Term Course Success (2.0 or Better)	2022-23	**2.4%**	**2.0%**	Small	➔*
First Term 13 Credit Attainment	2022-23	**-3.8%**	-1.8%	**Large**	➔
First Term College Level English	2022-23	**-6.3%**	0.1%	**Large**	➘
First Term College Level Math Completion	2022-23	-1.3%	1.1%	**None**	➚

*"small" can be debated here, as well as the trajectory, but true to category

A few tweaks in this table deserve note based on what we see this year in our results. The holy grail of measurement is not only to reflect absolute levels year to year, but some measure of *sustained* progress. This year, we had a couple instances of "whiplash" where previous losses and gains reversed themselves quickly (Retention and English). To check ourselves a bit on how we might use these data, we have included a **"2-Year Change"** and a **"5-Year Equity Trend"** to help us gain a more complete understanding of overall trends. Of course, the actual trends since 2009-10 are included here for more detail – in both measures and in equity – to tell a more complete story. When I do so, I am reminded and chastised often by these charts not to overemphasize one-year changes in our metrics. For parity differences, the challenge is even more pressing to look for even higher thresholds of consistency and appreciate variance much more.

What we see in the early data is more promising than not, and still moving in the right direction in some important areas. Three-year completion (and many of these measures), still has quite a bit of room to exceed our expectations by the end of the year.

The SBCTC First Time Entry Cohort (FTEC)

In previous reports we have mentioned the FTEC without much explanation. We receive a file a few months after the term ends (and SBCTC Data Services and Research is always looking to get this closer to real time), the quality of these data are usually very good, and the data definitions stay constant from year to year, enough so that it is IR's most reliable source for consistent "cohort" data.

The most valuable part of having a standard cohort file is that it reliably identifyies when students start their careers and whether they count as "new students" at any given time. It sounds basic, but it is one of our most vital, yet complicated and time-consuming measures to get right. In a community college, we have developed an IR saying if it can happen in a community college, it will. All this is an extended thank you to our colleagues at the SBCTC who enable us to look good by preserving meaning in multi-page definitions so we can present it here and interpret it with confidence. And I will plug a newer SBCTC researcher and former IR person who has labored on this, Diana Knight, who recently became the custodian of this collection.

That said, there is much we can learn from these data to complement what we see in the results - the most basic of which is displayed in Figure 1 – a snapshot of new Summer and Fall starts at CBC. Looking at our "new students" reveals a couple of telling observations that augment our look at enrollment and our results.

Figure 1. Composition of "New Student Enrollment" by Type and by Entry Term
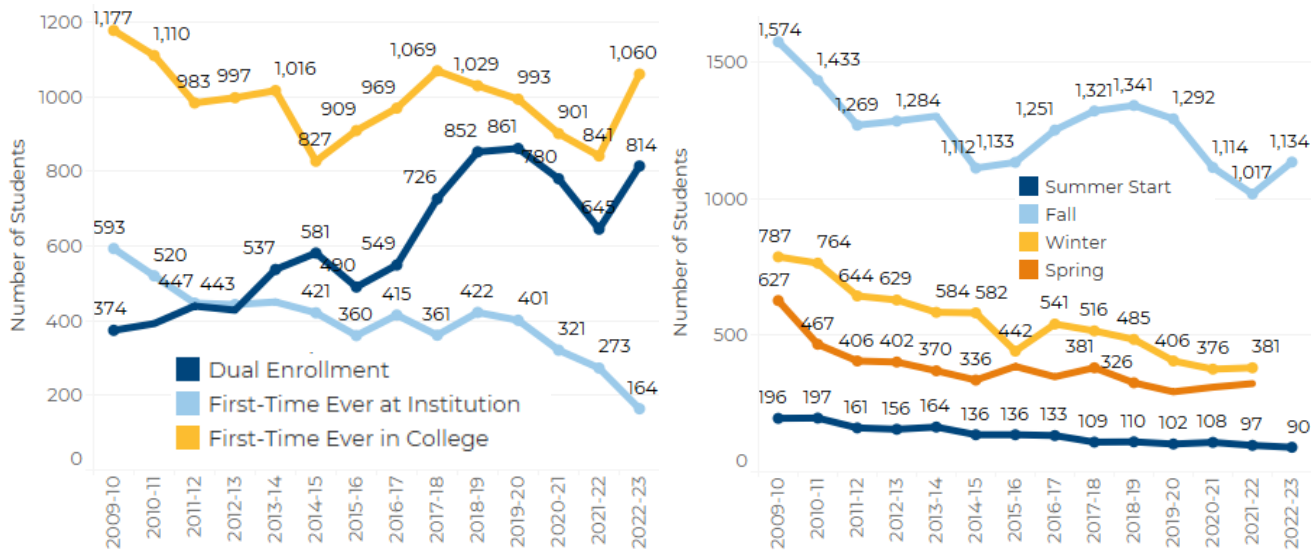
After Fall 2022, on the left is a breakdown of our biggest incoming cohorts (not including Transitional Studies or BAS students). "Dual Enrollment" is our Running Start students, "First Time Ever in College" are students who have never been to a post-secondary institution before CBC, and "First time Ever at Institution" are our transfer-in students. We can see rebounds in the yellow and dark blue that drive our first-time enrollment gain this year, while the light blue transfers in Summer and Fall have fallen this year as a continuation of a multi-year pattern. We are now, more than ever, dealing with students who are "completely new" to college. This is also important to note since the light blue "transfer-ins" have historically performed at least 5% better than their "completely new to college" peers in 3 Year Completion and a full 8% better at CBC than our "completely new" cohort. We will be watching to see whether the changes in these populations end up impacting our overall completion metric.

On the right, we exclude Running Start students and look at the new students by the term they first enter CBC. This is a more encouraging result in some ways since historically, Winter and Spring entrants do not do as well even after adjusting for the time lag. Winter and Spring starters are not addressed in mission fulfillment. And though it is never too late to start a higher education journey, the timing is not ideal (especially in a Guided Pathways career map sense), and may be a symptom of other life challenges. At any rate, our Fall cohort so far has shown a bit of relief from negative COVID enrollment.

Charts: Fall Leading Indicators and Year End Forecasts

This report is meant as a "Fall Update" of a key subset of Mission Fulfillment measures in order to get a very preliminary read on what 2022-23 results might look like – **in that first term (Fall 2022)**. Historically, most of these have done a decent job of forecasting and/or are of particular interest on their own. With any prediction about the future: "past results do not guarantee future returns" and even some first look data from the Fall have been a surprise.

The following pages show more detail of each measure:

- historical charts of our leading indicators in the Fall (updated in the Fall of 2022),
- potential equity/disparity changes,
- and what those changes might imply as a forecast to the end of the year.

Leading Indicators

Charts of changes in leading Indicators from the Fall term (All Students and Hispanic Students). These are mostly percentages taken "as of the end of the Fall 2022 term".

HSI Equity / Disparity Profile

Charts of changes in disparity between Hispanic and Non-Hispanic students (HSI focus). As we have in previous reports, we look at the magnitude of difference and characterize the size as:

- "not appreciably different from parity" (<2.0% Green),
- "small, but meaningful disparity" (between 2.0% and 5.0%), and
- "large and meaningful disparity" (>5.0% Red)

Forecast to End of Year

Finally, we consider what our target measures might look like at the end of the year based upon our leading indicators. These measures are extremely simple forecasts based on the most recent 10-14 years of data projected forward. In a couple cases, forecasts are not optimal (13 Credits and English College Credit), but provide the best information we have in what are important end of year outcomes. The others are historically consistent enough that they can be reliable "best estimates".

# Degree Completion (College Goal #1)

Leading Indicator: After 2 Years and 1 Term (Fall 2022), What is Our Completion Rate?

Fall 2022: For the cohort starting in the 2020-21 Academic Year, 3 Year Completion rates by the end of Fall were at the upper end of the historical range for All Students (21.5%) and near the upper end of the range for Hispanic Students (19.8%). Our expectation for this year was for completion rates to increase, and this was a bit more modest than our expectations based on early indicators. That said, we have the Winter and Spring terms of 2023, and if there were a surprise, we might expect it to be a positive one.
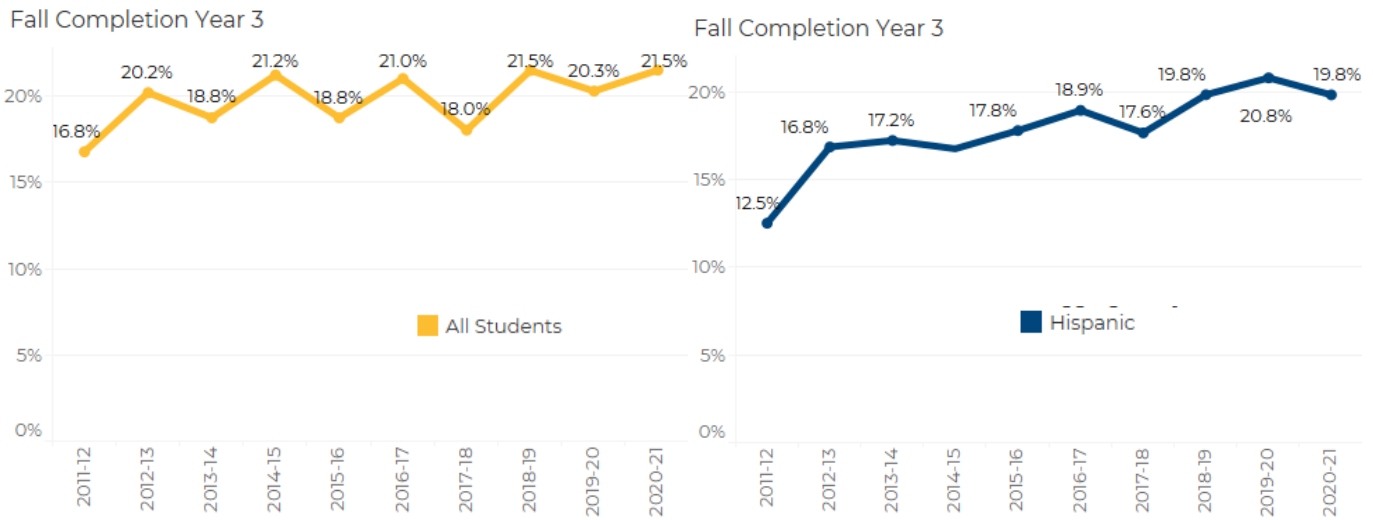
What is the HSI Equity Profile for this Leading Indicator?

Last year there was no meaningful gap in completion rates by this time, and three of the last six years. Historical, longer-term gaps have moderated, but this year we see a decline to -3.0%, a small, but meaningful difference.
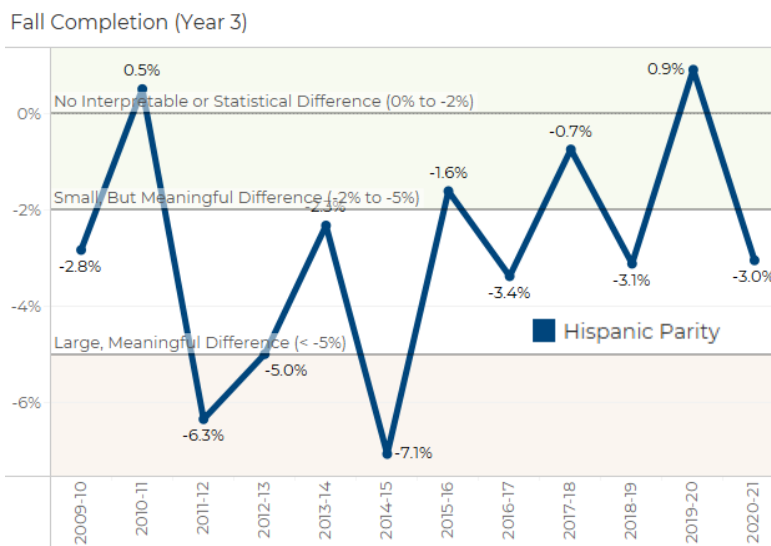
What do Fall Completion Rates Forecast for the End of Year?

Based on the early indicators, our best forecast for 3 Year Completion is 28.3%, and 34.7% for Completion + Transfer. Again, this is short of what we hoped it might be by this time, but again, there is still room for an upside surprise given the unique strength in leading indicators – and even if the indicator comes in at estimate, it will mark among the best results since 2014-15.
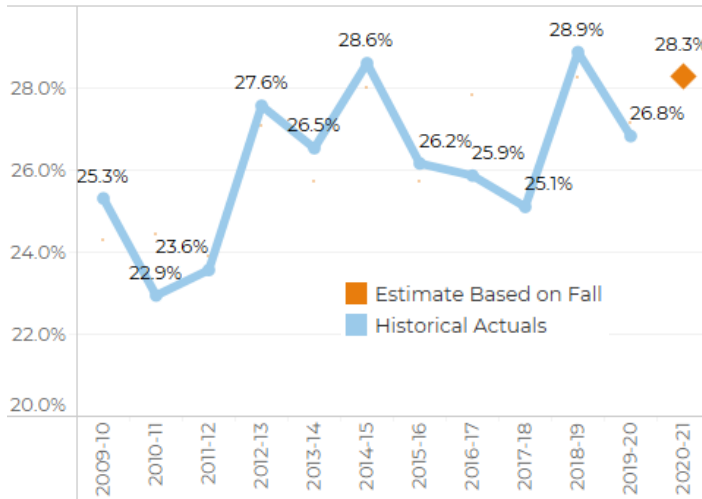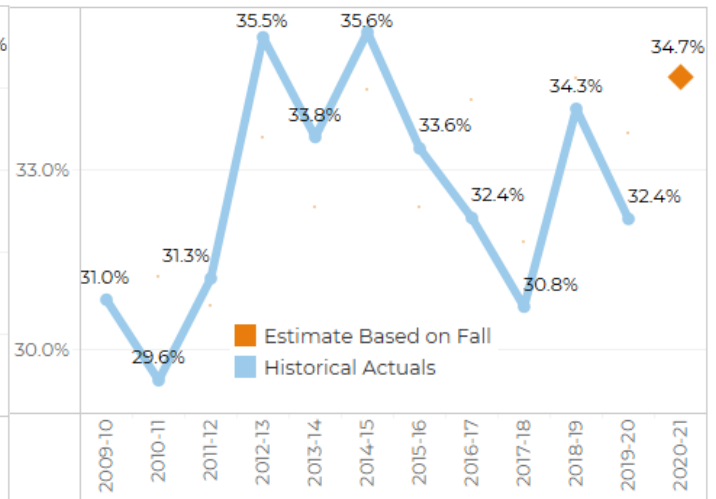
30 Credit Attainment (College Goal #2)

Leading Indicator: 13 College Level Credits in First Term

Fall 2022: This measure is included for two reasons – one being that it is the closest leading indicator we have that might look forward to one of our college goals: attaining 30 college credits by year end. The other is that this is the closest proxy for whether students are getting a true jump in the first term, which typically requires a full-time enrollment and no developmental course obligations. Yet, as it stands, these decisions are both highly correlated with SES generally (especially choice to work and need to complete developmental coursework) and can sometimes move more independently of our 30 credit target, even though the forecast is passable. Thirteen college level credit attainment has dipped to 35.9% (-3.8%).
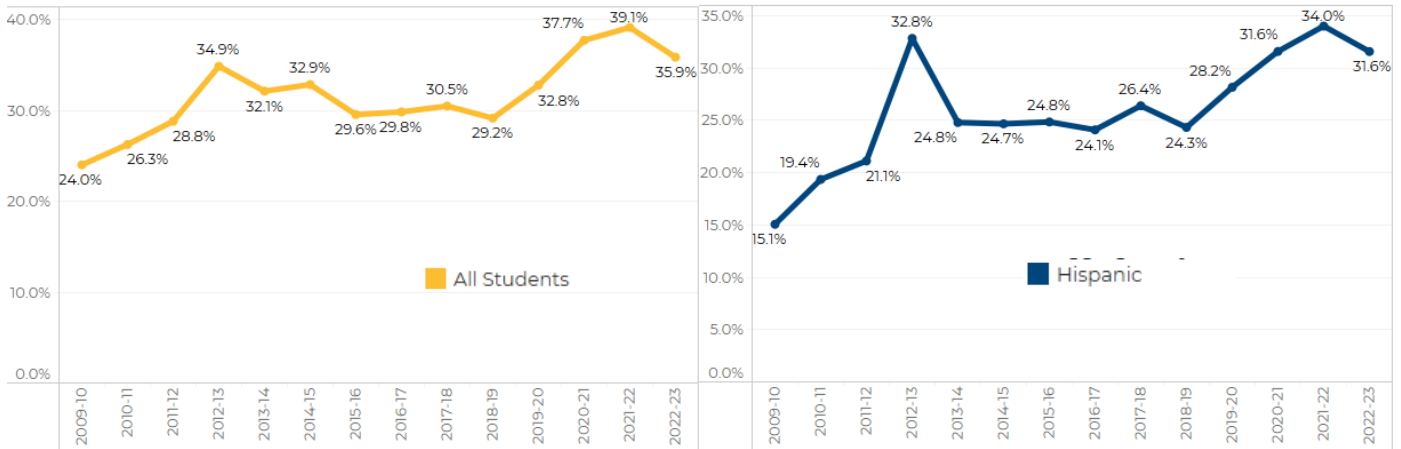

What is the HSI Equity Profile for this Indicator?

In terms of equity and parity, CBC has not been particularly good when it comes to this measure. Only one of the last 14 years shows anything better than a large difference, though the gap moderates somewhat as we get to "30 College Credits". Still a nearly double-digit difference speaks to the kind of start many students are getting.
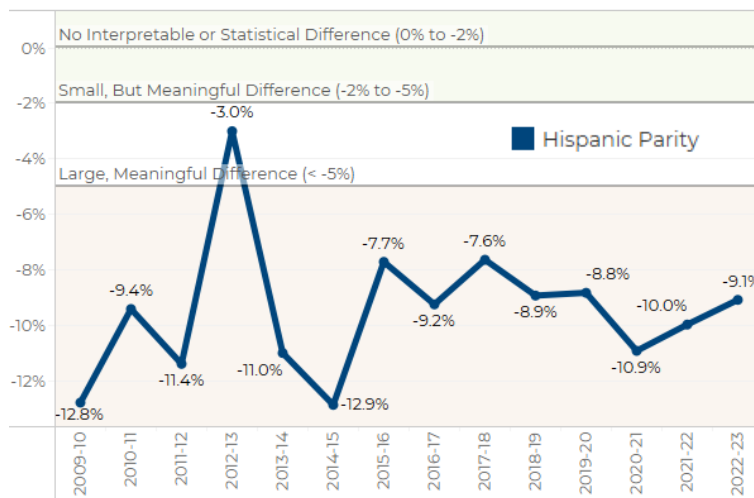
## What does this forecast for the End of Year 30 Credit Attainment?

The last two years have been records for CBC in this important leading indicator, so a downtick this year, while disappointing, still shows a strong upward trend.
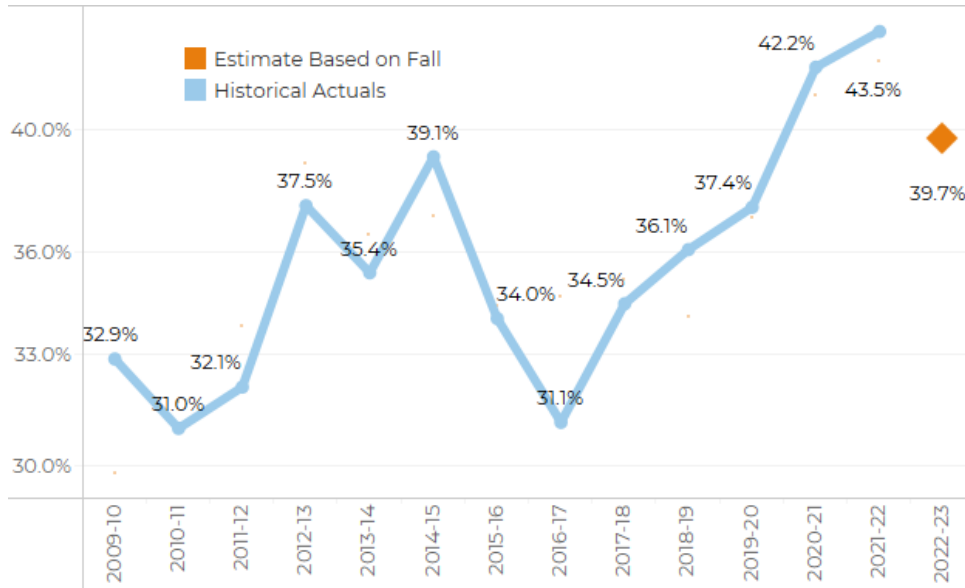
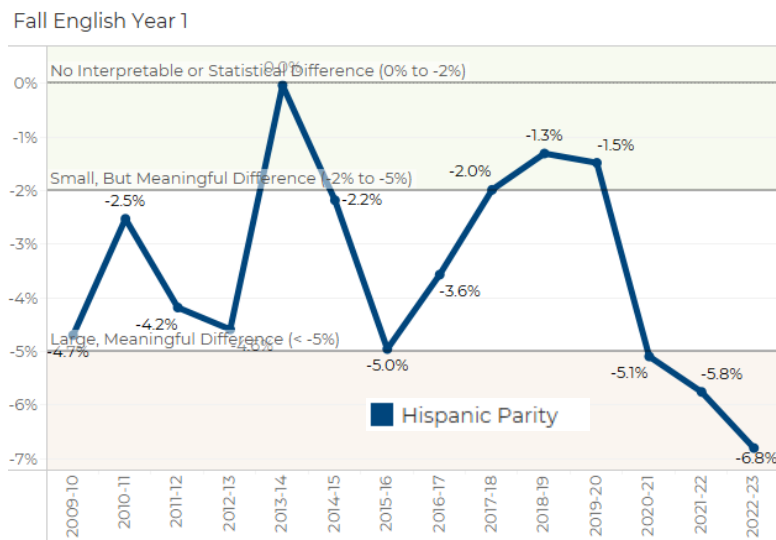# College English Completion (College Goal #3a)

Leading Indicator: After One Term, Completion of First Year College English

Fall 2022: After a big jump last year in this measure to 18.8% from 12.4%, we see first term English completion decrease to 12.5%, even while still above the several years prior. Last year's jump in the Fall, however, did not predict a higher end of year completion rate, so any inferences might not be reliable for forecasting end of year results. One potential reason can be an increase in competition for scarce Fall course slots with Running Start students.
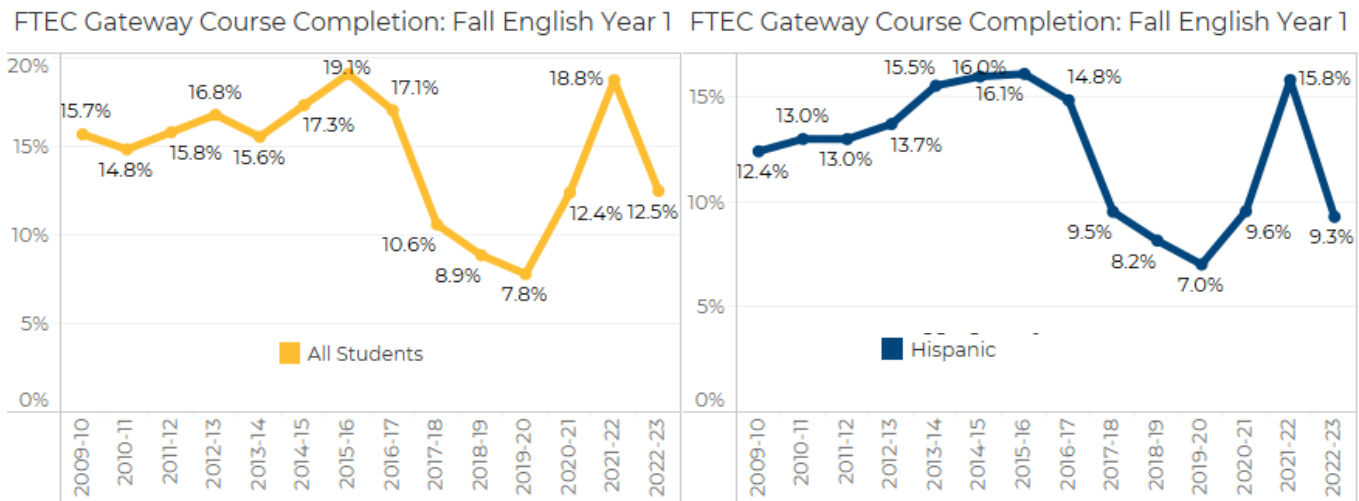

What is the HSI Equity Profile for this Indicator?

The first term English completion leading indicator dipped for a third straight year, further into what is a "large and meaningful difference" (-6.8%). Historically this indicator has had small or no meaningful difference, but the disparity has widened over the last three years.

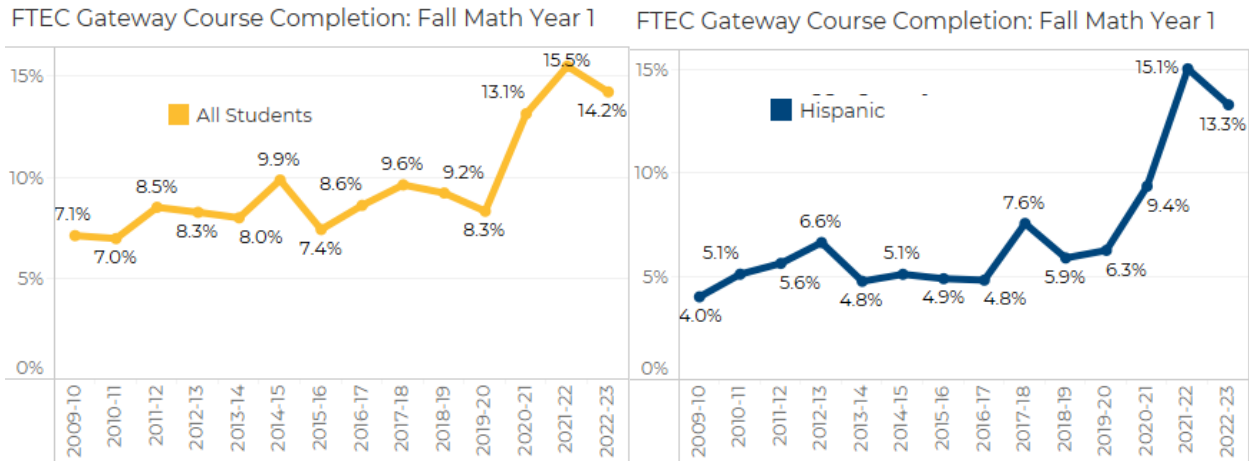## What does this forecast for the End of Year College English Completion?

Last year's leading indicator increase to 18.8% (+6.4%) in the Fall was followed up by a year-end total that was slightly down to 34.1% (-0.3%). One ramification of that incongruity is a difficulty in predicting the following year, and that lack of "model confidence" translates to only a modest forecasted drop to 32.3%. The 32.3% estimate here will be between 30% and 35%, a wide band.

Best Estimate: English Year 1
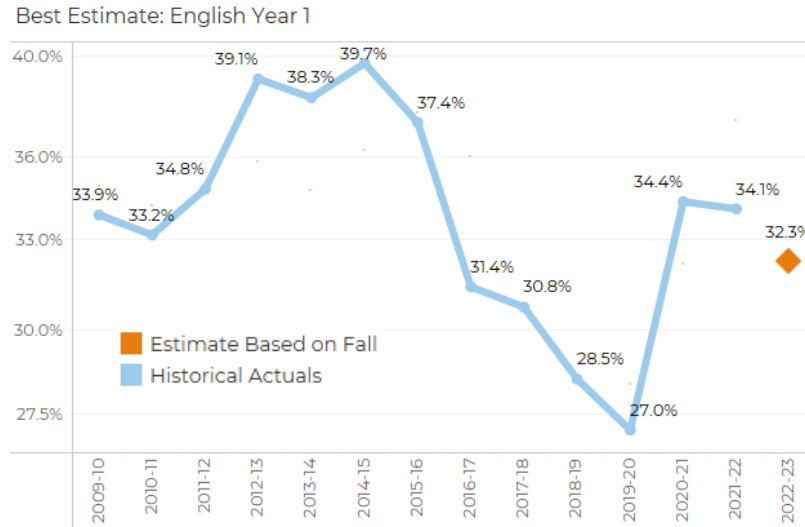
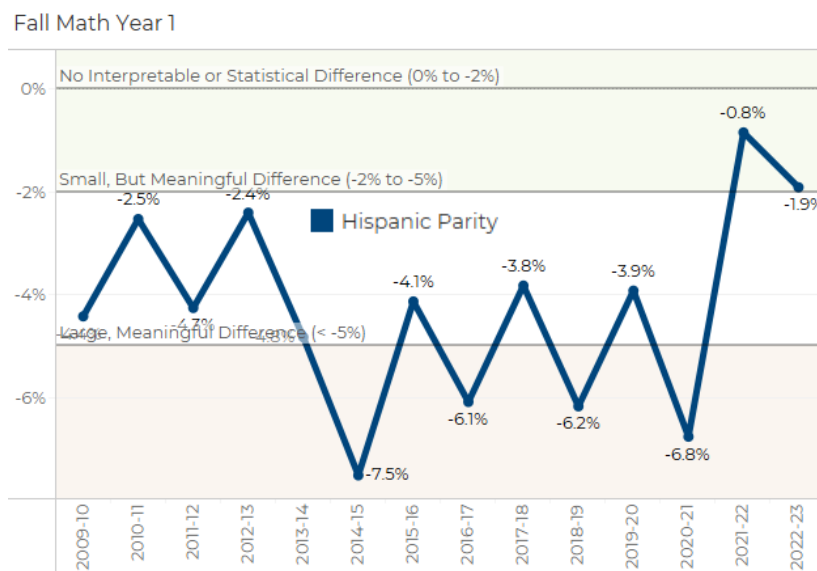# Math Completion (College Goal #3b)

Leading Indicator: After One Term, Completion of First Year College Math

Fall 2022: Normally, math completion in the first term is accomplished by students who place immediately into college math. Before non-testing placement (transcript-based), this was less frequent. Since COVID, alternate placement into college level has been more common. While performance overall has gone down a bit, 14.2%, and 13.3% for Hispanic students, it is well above pre-COVID baselines.

FTEC Gateway Course Completion: Fall Math Year 1


FTEC Gateway Course Completion: Fall Math Year 1

What is the HSI Equity Profile for this Indicator?

In the equity area, this year has been encouraging, not because of the direction of parity (-1.1%), but that the positive showing from last year did not regress to levels seen in the prior seven years.

Fall Math Year 1

What does this forecast for the End of Year College Math Completion?

The forecast for the end of year (31.6%) is lower than last year, but the gains realized over COVID have not given ground to pre-COVID levels, and is the first decrease in this measure since the developmental math redesign.


Best Estimate: Math Year 1
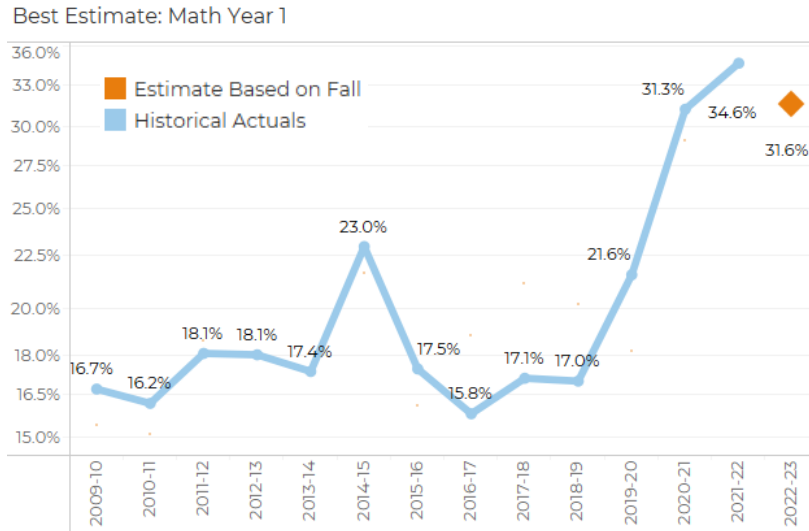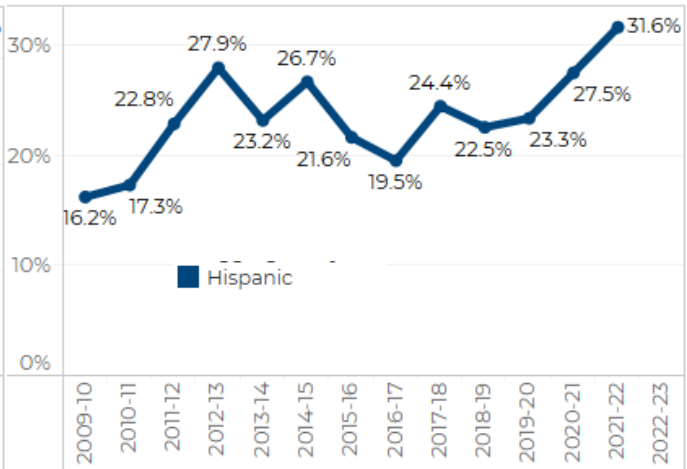
45 College Credit Attainment by Year 2

Leading Indicator: After 1 Year and 1 Term (Fall 2022), What is Our 45 Credit Attainment?

Fall 2022: For the cohort starting in the 2021-22 Academic Year, 45 Credit Attainment rates by the end of Fall were at the upper end of the historical range for All Students (32.9%) and for Hispanic Students (31.6%). This +3.2% result is more surprising given the jump last year. Students who attain 45 credits by the end of their second year have historically completed or transferred 80% of the time, so this early increase is a strong sign for next year.
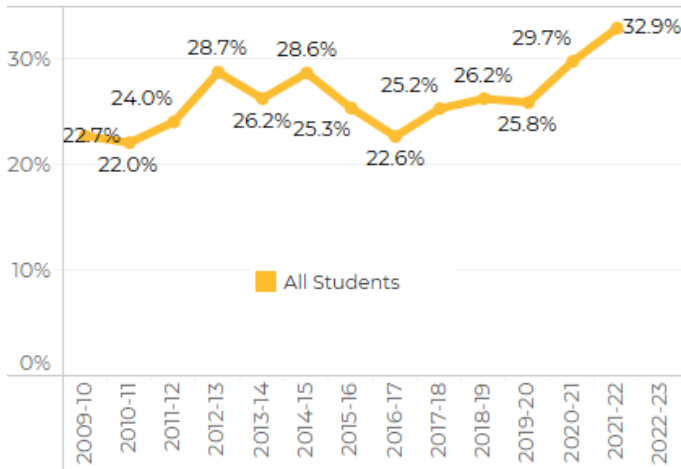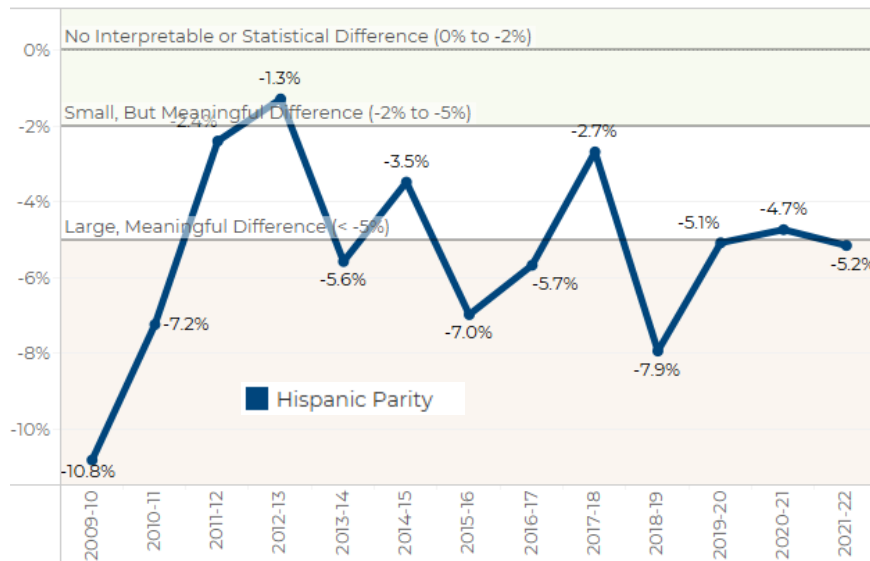

What is the HSI Equity Profile for this Leading Indicator?

This year there was a larger gap that crossed the threshold from "small" to "large" by virtue of less than a percentage point decline. That said, historically, the 45 credit by year 2 leading indicator has been a frequent and consistent resident below 5% since 2009-10.
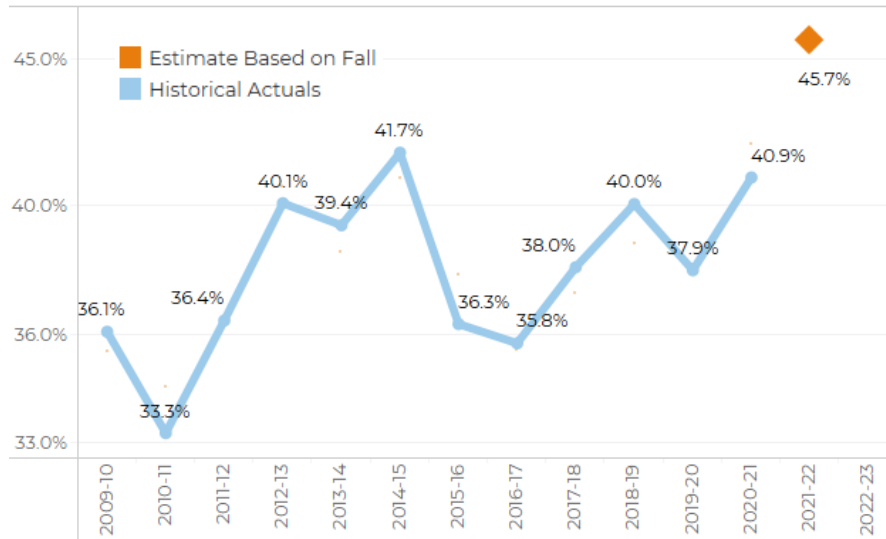
What does this forecast for the End of Year 45 Credit Attainment?

Based on the early indicators, our best forecast for 45 credits by the end of the year should hit records in this cohort by the end of the year (45.7%).


Best Estimate: 45 Credits or more (Year 2)

Fall to Fall Retention

Leading Indicator: Fall to Fall Retention (Actual/Final)

Fall 2022: For the cohort starting in the 2021-22 Academic Year, Fall to Fall Retention was a bit of a surprise. Early estimates done in early Fall were not so rosy, but the more precise cohort identification (checking against historical first-time enrollment) in FTEC showed that true first-time degree-seeking students rebounded from our COVID retention dip. While this is a relief and a positive sign compared to recent performance, we are still below long-term averages.
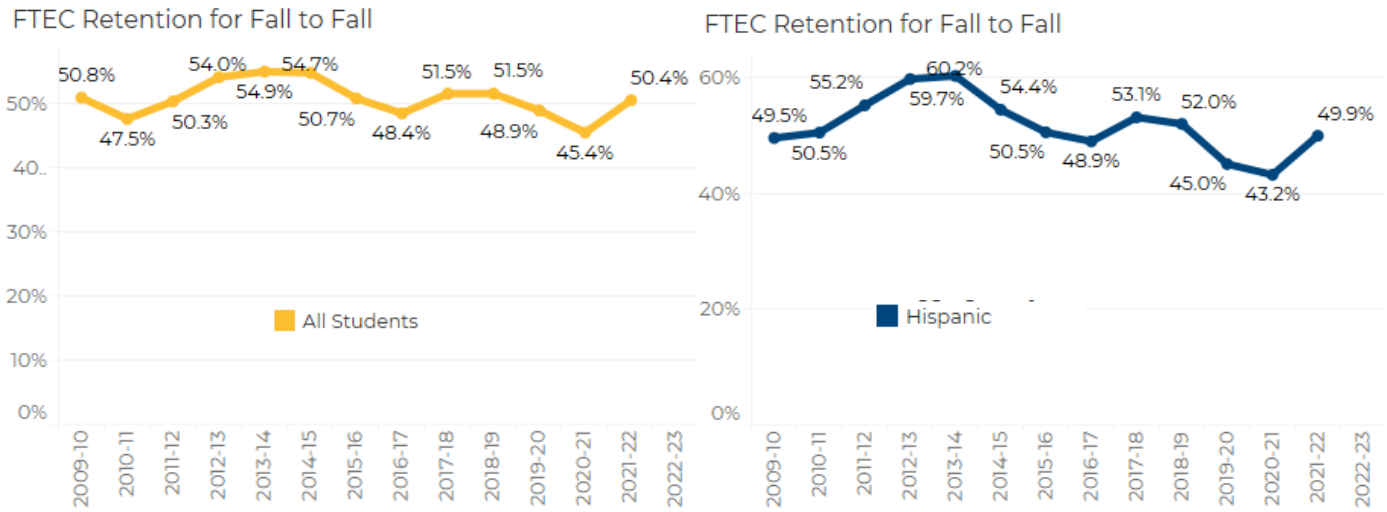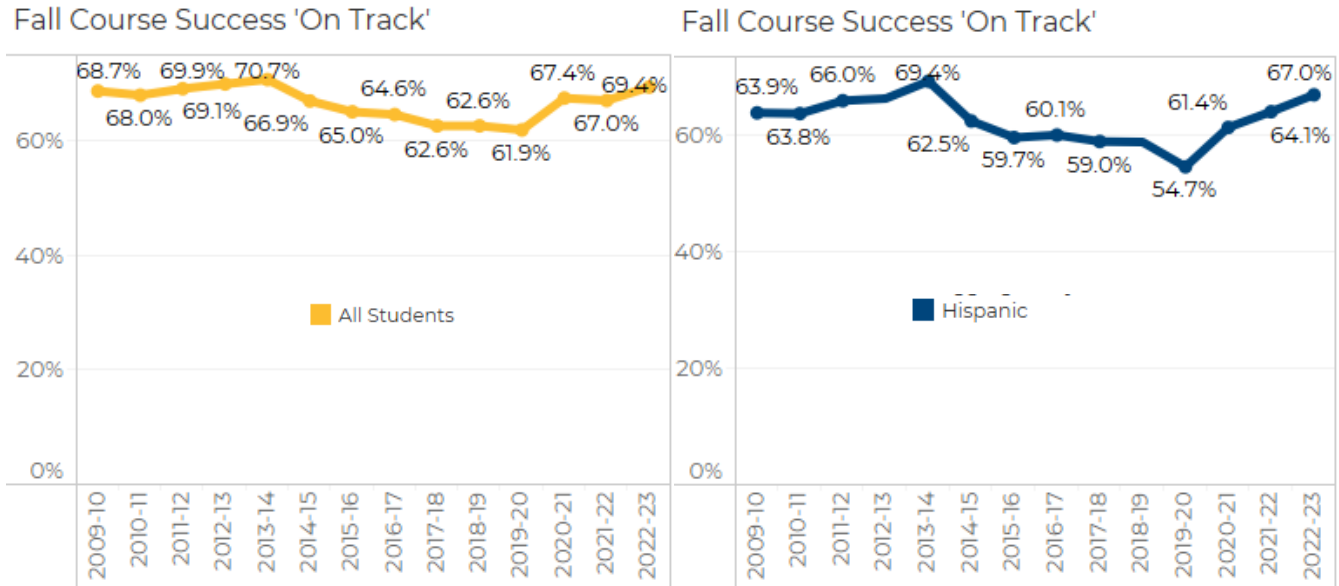

What is the HSI Equity Profile for this Indicator?

As far as equity and parity, Fall to Fall retention has been a unique historical strength. COVID years saw equity gaps increase drastically, so it bears monitoring even if parity sees recovery in this year that has accompanied the rebound in retention.
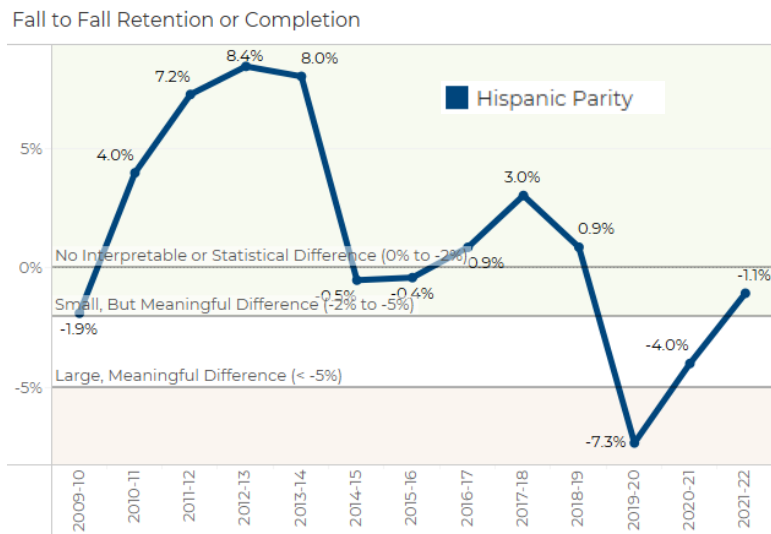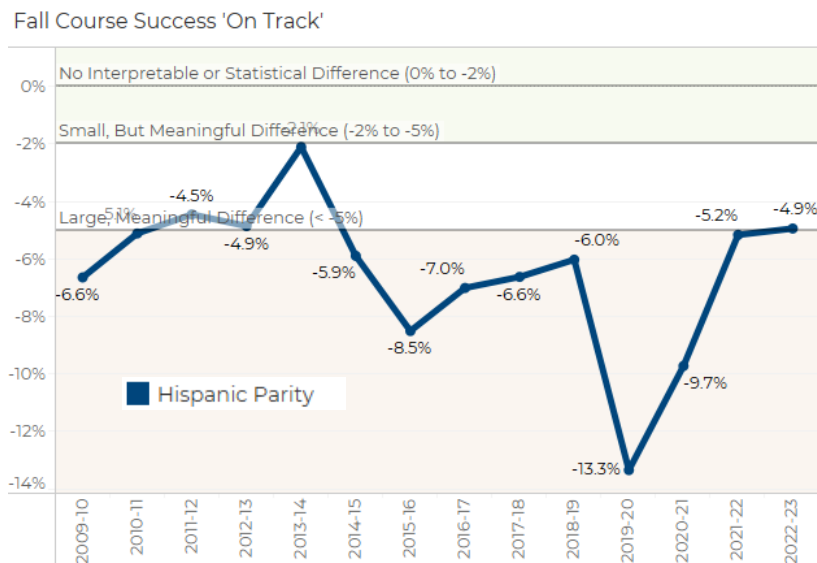
Course Success

Leading Indicator: After One Term, Course Success ("On Track")

Fall 2022: We see a modest uptick in the proportion of students who succeeded in all their coursework in their first Fall term 2022 to 69.4%. This measure tends to fall below 50% as students accumulate coursework in the Winter and Fall, but this is a good start, having recovered ground in the last three years.

Fall Course Success 'On Track'

Fall Course Success 'On Track'

What is the HSI Equity Profile for this Indicator?

Just like its companion measure at the end of the year, course success, while nominally -4.9% and a "small, but meaningful" by designation, the history here has been more typically of large and persistent gaps. Since the measure is cumulative, any **additional** difference that persists would push this measure below 5% by year's end, so it may not be particularly encouraging by itself. It will most likely show up as a large difference by year end, the most consistent, negative gap in a uniquely predictive measure.

Fall Course Success 'On Track'

What does this forecast for the End of Year Sustained Course Success?

The 47.5% and 48.3% course success rates significantly outperformed prediction two years in a row (students did better than predicted given their Fall performance). While students may outperform again, especially if course credit attainment continues to hold steady for this group, the estimate for next year is a modest 47.0% based on history.